

**GOVERNOR'S TASK FORCE
ON THE PLANNING AND DEVELOPMENT
OF MARINE AQUACULTURE IN MAINE**

Draft Report and Recommendations

December 31, 2003

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I. EXECUTIVE SUMMARY

To be written by Paul Anderson and Josie, following consideration of the SAP recommendations.

A categorized summary of all recommendations included in the report will appear after the Executive Summary.

II. INTRODUCTION

III. BACKGROUND

Explanatory text will precede the vision statement.

Maine's Vision for Marine Aquaculture

Marine aquaculture is an important and compatible element in Maine's diverse coastal economy. Aquaculture benefits local communities and the public interest by producing high quality products, providing economic opportunities, and operating in an environmentally sustainable fashion. Maine's planning and regulatory process is adaptive, inclusive and fair, and supports the growth of the industry in an economically sustainable way.

Principles for Marine Aquaculture

- A working waterfront is critical to Maine's coastal future. Marine aquaculture will be part of Maine's working waterfront.
- Aquaculture will be one of many uses of Maine's coastal environment that can be accomplished so as to be compatible with other activities and in harmony with natural resources.
- Marine aquaculture will be practiced in an environmentally sustainable fashion and will not cause permanent ecological damage.
- Maine's aquaculture leasing program will model integrity in all aspects of its operation.
- The State of Maine will encourage local participation in aquaculture permitting decisions.
- Maine's aquaculture laws and regulations will provide flexibility to address change.
- Maine's aquaculture leasing process will provide for open communication amongst stakeholders.
- Maine's aquaculture monitor program will feature state-of-the-art environmental monitoring.
- Marine aquaculture can only flourish with high water quality.
- Marine aquaculture offers the potential to bring substantial economic value and diversity to the state and its communities.
- The State of Maine will create a welcoming environment for a range of investments in marine aquaculture.
- The State of Maine will encourage the development of locally-owned and Maine-based operations.
- The State of Maine will provide and encourage incentives for innovation in marine aquaculture.

IV. MAINE'S AQUACULTURE INDUSTRY: CHARACTERISTICS AND TRENDS

Issue Summary

Over the last two decades there have been significant changes within both the aquaculture industry itself and the political, social and regulatory context in which it operates. In trying to balance the range of potential uses of state waters, a public asset held in trust for the benefit of the people of the state of Maine, and plan for the future development of the this industry that depends on the use of this public asset, it is important to understand these changes as well as to identify current trends within both the industry and its context. Key issues include the following: what is its current economic value to the state's economy, what are its potential growth prospects, what are limitations on that growth, what are the external economic impacts of such growth, and what is the appropriate role for the state of Maine with regard to this industry.

How this Issue was Studied

The Task Force gathered information about the industry from public testimony and from data available through the Maine Department of Marine Resources and the Maine State Planning Office.

In addition, the Task Force was presented an economic study of the industry commissioned by the Maine Department of Marine Resources. This study was conducted by Gardner Pinfold Consulting Economists, Ltd., of Halifax, Nova Scotia. The study provided a quantitative assessment of the economic impact of marine aquaculture in Maine and a quantitative assessment of the aquaculture viability and growth projections for eight species. (A summary of the finding of this study is included in the appendix. A copy of the full report is available from the Maine Department of Marine Resources.) This study was not peer reviewed and the Task Force was not provided any direct critique of its findings.

Findings

Based on the information it gathered, including the Gardner Pinfold study, the Task Force makes the following findings:

Current status:

1. Maine's marine aquaculture industry has two distinct sectors: finfish (salmon) and shellfish (oyster and mussels).
2. Maine's finfish sector is a small part of a much larger, highly consolidated global industry. Maine salmon farms supply less than 5% of the US market, and represent less than 1% of salmon produced worldwide. Currently, processing facilities, feed and equipment are supplied from outside of Maine and Maine's industry is primarily a grow-out operation that supports Canadian and Norwegian firms.

3. Maine's shellfish aquaculture industry consists of mussel, oyster, hard clam and surf clam culture. Shellfish culture is primarily an owner-operator industry with a high enough profit margin to be viable on a small scale.
4. The total value (sales revenue) of aquaculture production in Maine is currently estimated at \$57 million, with salmon accounting for 95% of this. This represents a decline from the late 1990s, when higher salmon production and prices resulted in a \$75-80 million industry.
5. Over the last 10 years finfish aquaculture has annually produced the second highest sales revenue of all Maine fisheries. In 2002, those landing were as follows: lobster- \$207 million; finfish (salmon)- \$30M; groundfish- \$22.5M; clams -\$14.8M; shellfish aquaculture -\$3M
6. The Maine aquaculture industry provides 330 jobs (finfish sector: 225; shellfish: 105) with an estimated payroll of \$20.3 million.(Gardner Pinfold Study)
7. Compared with other economic sectors that rely on the state's coastal resources, aquaculture's economic impact is modest. Tourism contributes \$2.8 billion, Marine Transportation \$2.7 million, Living Marine Resources \$382M, Marine Construction \$44.9M, and Marine Minerals \$14.9M to the marine economy. Aquaculture contributes .1% to Maine's Gross State Product (Colgan, 2002 and Gardner, 2003).
8. The finfish sector industry is centered in Washington County, in Cobscook and Machias Bays, although there are also finfish aquaculture operations as far west as Blue Hill Bay in western Hancock County. The shellfish sector is centered in the Damariscotta River estuary where much of the oyster production takes place, although there are mussel and oyster aquaculture facilities in various locations along the mid-coast area.

Trends: Finfish

1. The finfish aquaculture industry in Maine has changed from an industry of small owner operator fish farms in the 1980's to an industry in 2003 that is largely consolidated in three multinational aquaculture corporations that grow and process aquaculture products in other places in the world.
2. Farm raised salmon, the primary finfish product, has moved in the marketplace from a high-priced niche product to a low priced global commodity.
3. Disease, particularly the infectious salmon anemia virus, has presented significant problems for the industry, causing economic loss, prompting new husbandry practices and processing arrangements.

4. Processing facilities of Maine's salmon aquaculture products have shifted to Canada because of fish health issues and economies of scale.
5. Direct employment in the salmon finfish sector has declined from approximately 1000 in the late 1990's to approximately 330 currently, caused by both a shrinkage of the industry as well as increased automation.
6. The state's original vision of finfish aquaculture as a major economic development strategy for Washington County that would provide fishermen a new economic activity to supplement declining wild fisheries revenues has not been realized. Likewise the goals of a 1997 strategic plan for the aquaculture industry prepared by the Maine Department of Marine Resources during the administration of Governor Angus King to triple aquaculture's contribution to the state's economy (to \$192 million) and double the number of aquaculture-related jobs (to 1620) have proven unrealistic have yet to be realized.
7. Over the last few years, as the salmon finfish industry has attempted to shift some of its growout operations to new lease sites further westerly along the coast, most notably to Blue Hill Bay, it has encountered stiff local resistance based on perceived conflicts with existing economic uses of those coastal resources, concerns about water quality impacts, and visual and noise impacts.
8. Conflicts with public efforts to restore the wild salmon stocks to Maine's historic salmon rivers has also generated some opposition to the salmon finfish aquaculture industry, while legal issues associated with the Maine industry's compliance with the federal Clean Water Act have also presented obstacles to the industry's development.
9. Globally, there is evidence of continuing growth both in aquaculture production and in demand for aquaculture products, especially if wild capture fisheries continue their decline. Salmon finfish aquaculture production in other countries (Norway, Chile) with larger and more developed industries provide intense competition to Maine's relatively small industry yet the United States is a large market for aquaculture products that provides opportunity for the Maine industry.
10. Many forces will determine the future of salmon finfish aquaculture in Maine, and most are beyond the influence of state government. Although it has not proven to be a "silver bullet" economic powerhouse, it is reasonable to project that salmon finfish aquaculture will continue to be one element in a diverse array of economic uses of the state's coastal economy. The state should thus provide the opportunity for this economic sector while both ensuring its compatibility with other existing and potential uses of the public's coastal resources and protecting the quality of those resources.
11. Finfish aquaculture in Maine is not limited to only growing salmon. A number of other new and promising species may emerge that can further the expansion of

finfish production at sea. These species may include, halibut, haddock, and cod, among a number of others.

Trends: Shellfish

1. Shellfish aquaculture, particularly the oyster industry, continues to develop on a small scale, owner operator basis.
2. Although there have been conflicts around individual siting decisions, shellfish aquaculture has not generated the same degree of public opposition as finfish aquaculture, in part because the small scale of the operations allow them to fit more easily with other coastal uses and because no external food inputs occur.
3. Shellfish growers see enough growth in demand to support their small-scale operations for the next 10-20 years, with many planning expansion of their production.
4. The shellfish aquaculture industry continues to develop steadily and holds continued promise as an element of Maine's coastal economy that is compatible with other uses and provides a high value product. In the past five years, training programs have increased employment in both the oyster and mussels sectors. The state should continue to help provide opportunity for this use of the public's coastal assets.

Recommendations

- In addition to the recommendations found elsewhere in this report, which are all at least in part based on the above findings, the Task Force recommends the adoption by the state of the following vision and value statements to help guide its future relationship with the aquaculture industry:

Maine's Vision for Marine Aquaculture

Marine aquaculture is an important and compatible element in Maine's diverse coastal economy. Aquaculture benefits local communities and the public interest by producing high quality products, providing economic opportunities, and operating in an environmentally sustainable fashion. Maine's planning and regulatory process is adaptive, inclusive and fair, and supports the growth of the industry in an economically sustainable way.

Principles for Marine Aquaculture

- A working waterfront is critical to Maine's coastal future. Marine aquaculture will be part of Maine's working waterfront.

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- Aquaculture will be one of many uses of Maine's coastal environment that can be accomplished so as to be compatible with other activities and in harmony with natural resources.
- Marine aquaculture will be practiced in an environmentally sustainable fashion and will not cause permanent ecological damage.
- Maine's aquaculture leasing program will model integrity in all aspects of its operation.
- The State of Maine will encourage local participation in aquaculture permitting decisions.
- Maine's aquaculture laws and regulations will provide flexibility to address change.
- Maine's aquaculture leasing process will provide for open communication amongst stakeholders.
- Maine's aquaculture monitor program will feature state-of-the-art environmental monitoring.
- Marine aquaculture can only flourish with high water quality.
- Marine aquaculture offers the potential to bring substantial economic value and diversity to the state and its communities.
- The State of Maine will create a welcoming environment for a range of investments in marine aquaculture.
- The State of Maine will encourage the development of locally-owned and Maine-based operations.
- The State of Maine will provide and encourage incentives for innovation in marine aquaculture.

V. State and Federal Law Relating to Submerged Property and Riparian Rights, and the Adequacy of such Law to Address Current Issues Relating to the Use of Maine's Coastal Waters

Background

The federal Submerged Lands Act (SLA)¹ clarifies the seaward boundaries of coastal states and their rights of ownership and management of living and non-living resources on these submerged lands and in supervening waters. Under the SLA, Maine has title to submerged lands from the mean low water mark to 3 nautical miles. To date, aquaculture proposals in Maine have been located in near shore waters or in the intertidal zone, as opposed to within or near federal waters outside of 3 nautical miles.

The Public Trust Doctrine provides that public trust lands, waters and living resources are held by the State in trust for the benefit of all the people, and establishes the right of the public to fully enjoy these areas for a wide variety of public trust uses, including commerce, navigation, fishing, and bathing.

Maine's Submerged Lands Act 12 MRSA 5§1862 allows the State (Department of Conservation, and for aquaculture, DMR under 12 MRSA Chapter 605) to enter into leases for a specific term to place structures (piers, wharves, docks, aquaculture facilities) that promote commerce, navigation, or other productive uses of the waters. Both agencies may only enter into lease arrangements if they determine that the use meets standards that protect the public's right to use and enjoy submerged lands.

The submerged lands leasing processes of DOC and DMR have many similarities:

- Decision-making authority rests with the agency;
- Criteria consider many of the same factors related to protection of existing public uses;
- Fees are charged;
- Notification is conducted in a similar fashion. Riparian owners, harbormasters and towns are routinely consulted;
- There is public comment period; and
- Appeals of decisions are made to Superior Court.

There are several differences in the way the Department of Conservation leases submerged lands and the manner in which DMR considers proposals to lease public lands for aquaculture facilities:

- DOC limits their decision whether to issue a lease for a given piece of bottom to whether it will unreasonably interfere with navigation, fishing, and other marine uses, or the ingress and egress of riparian owners. DOC does not consider environmental issues associated with activities at proposed leases;

¹ 43 U.S.C. § 1301-1315

The Department of Environmental Protection provides that review under the Natural Resources Protection Act.

- DOC does not use an adjudicatory process under the Administrative Procedures Act.
- Public hearings are not required; DOC sometimes piggybacks on municipal hearings (see bullet below).
- Uses or facilities proposed at lease sites sometimes fall under municipal jurisdiction and require municipal permits. DOC leases can be “trumped” if applicants do not obtain municipal approval for projects.
- DOC can require applicants to provide compensation if public uses of submerged lands have been restricted, although this provision is rarely used.

Riparian owners are afforded certain “rights” under a variety of laws – their rights of ingress and egress are protected under submerged lands leasing and aquaculture leasing laws, they are granted preferential consideration for aquaculture leases (Title 12 MRSA Section 6072 Subsection 8) and for moorings (Title 38 MRSA Chapter 1 Section 3.) Riparian owners are considered interested parties and are notified of lease applications under both DOC and DMR processes. However, besides protection of ingress and egress, there are no other special considerations afforded riparian owners as part of submerged lands leasing. In *Harding v. Commissioner of Marine Resources*, 510 A.2d 533(1986) the Supreme Court in Maine upheld the granting of an aquaculture lease by DMR. The appeal charged that DMR failed to consider diminution of private property value that allegedly occurred due to the granting of the lease. The Court concluded that DMR must consider protection of public uses such as fishing, swimming, lobstering and boating when making lease determinations.

Resources Used by the Task Force

The Task Force invited public testimony on the topic of the public trust and submerged lands leasing. They also received a compilation of previously published articles and papers on these topics from Dr. Alison Reiser, Director of the University of Maine School of Law. A panel discussion on these topics was held at the Task Force’s meeting of October 16, 2003 and included Jeff Pidot, Assistant Attorney General for the State of Maine, and Dan Prichard, Director of Submerged Lands Leasing Program, Division of Parks and Lands at the Department of Conservation.

Conclusion

The Task Force was asked to consider the adequacy of existing state and federal laws to address competing uses of Maine’s waters and to address concerns of riparian owners. The Task Force conducted an overview of the state’s public trust responsibilities, compared DMR and DOC statutes, regulations and processes and discussed pertinent Federal law (Submerged Lands Act and Public Trust Doctrine. These state and federal laws provide a complex legal construct for state management of submerged lands. The existing framework requires the state to consider and protect existing public uses of submerged lands such as fishing, recreation and navigation.

The Task Force heard many members of the public voice concern about the lack of consideration of private property rights and concerns about interference with views from private property during the leasing process. However, existing case law in Maine (Harding v. Commissioner of Marine Resources, 510 A.2d 533(1986)) upheld aquaculture leasing as an acceptable use of state waters and directed the state to consider public uses rather than private property interests during the leasing process.

While it was beyond the scope of the Task Force to recommend changes to Maine's complex legal framework concerning submerged lands management, the Task Force, in other sections of this report, makes recommendations that, if implemented, would improve the consideration of public uses during the leasing process.

VI. ASSESSMENT OF THE LEASING PROCESS

Issue Summary

The process by which state water is leased for the conduct of marine aquaculture is a very important aspect of the Task Force's review of marine aquaculture in Maine. The Task Force heard comments from both the public and the industry criticizing the lease process. Some of the concerns heard by the Task Force include the formality of the process, the nature of public involvement in the process, and the sufficiency of the decision criteria used by the Commissioner when determining whether or not to grant a lease. Additionally, the Task Force heard concerns regarding the reactive nature of the current lease process, i.e., that the Department considers leases on a case-by-case, the process is not based on planning, and does not consider the cumulative impact of the lease decisions. The Task Force also heard that the new fallowing requirement for disease control has created a need on the part of leaseholders to obtain more lease sites. In addressing these and other concerns, there is a need to balance the simplicity of the process with adequate public participation. The ultimate goal is a streamlined process that is more inclusive for all parties.

How this Issue was Studied

The Department submitted several written documents to the Task Force to explain the current lease process, to compare the DMR process to that of other agencies, to analyze external issues that affect the lease process, and to propose regulations regarding the new decision criteria of noise, light and visual impacts. DMR's aquaculture hearing officer, aquaculture environmental coordinator and his assistant gave an oral presentation to the Task Force on the lease process and answered questions posed by Task Force members and the Stakeholder Advisory Panel. Staff from the Department of Environmental Protection and Department of Conservation submitted written documents and gave oral presentations and answered questions regarding their respective permitting processes, i.e., Site Law permitting, visual impact assessment under Chapter 315 and Submerged Land leasing. Several SAP members and members of the public submitted written and oral comments regarding the lease process. A brief summary of the content of those comments is provided within each category below.

Outline of Lease Process Analysis

The Task Force undertook a very thorough analysis of the lease process and has developed specific recommendations on the various pieces of the lease process that should be changed. The structure of their analysis is as presented below:

A. Administrative Procedure Act (APA) Lease Process

1. The Formality of the Lease Process
2. Public Information Prior to Application Submission
3. Public Information and Communication
4. Conflict Resolution or Mediation Procedures

- B. The Role of Municipal Government in the Leasing Application and Approval Process
 - 1. Timing and Adequacy of Municipal Involvement
 - 2. Mooring Fees
 - 3. Intervenor Status
 - 4. Intertidal Leasing
 - 5. Municipal Input on Lease Decisions
- C. Decision Criteria and Granting Leases
 - 1. Noise and Light
 - 2. Visual Impact
 - 3. Sufficiency of Existing Criteria
 - 4. Final Decision-Maker for Lease Applications
- D. Lease Renewals and Transfers
 - 1. Procedure for Lease Renewals and Transfers
 - 2. Fees for Renewal and Transfer Applications
- E. Administrative Issues
 - 1. Lease Acreage Limit
 - 2. Enforcement
 - 3. Lease Fees and Fines
 - 4. Time Period for Site Review
 - 5. Polyculture
- F. Experimental Leases

A. Administrative Procedure Act (APA) Lease Process

1. Formality of the Lease Process

Issue Summary

As required by current Maine statute, public hearings held to receive information regarding a proposed lease are adjudicatory hearings, conducted in the manner provided under the Maine Administrative Procedure Act (APA), Title 5, chapter 375, subchapter IV. The Task Force heard from some members of the public that this requirement results in a lease process that is too formal and intimidating to both the applicant and the general public. Some people have found that it is difficult to understand the opportunities that exist to provide input on the proposed lease. Some commented that at the public hearing, people who want to provide testimony may not know what information can be used by the Department to make the decision regarding the proposed lease (i.e. the decision-criteria, 12 MRSA §6072 sub-§7-A). This has led to situations where people feel that even though they had the opportunity to speak, they were not heard, and their input was not valued. The Task Force also heard that the existing lease process is intimidating to the lease applicant, especially where the lease is particularly controversial. It is frustrating to applicants when people claim that there was no notice of their application, when it was advertised in all of the local newspapers and riparian owners have received direct notice. The Task Force considered the relative merits of the APA process, in comparison to other permitting models such as the Department of Environmental Protection's Site Law permitting, and the Department of Conservation's Submerged Lands leasing program.

Findings

1. The current lease process has undergone several recent statutory (September 2003) and regulatory (February 2003) changes.
2. Because these changes are relatively recent, their effect has not been fully realized.
3. Benefits of the APA process include the creation of a thorough record on which the Department can base its decision, ample opportunity for the public to participate by asking questions of witnesses and providing testimony, and a structured, orderly proceeding to handle contentious issues.
4. The formality of the APA process reflects the seriousness with which the rights and obligations conferred by the lease are reviewed.
5. A proposed pre-application scoping session (A.2 of this section) will provide an opportunity for a more informal information exchange.

Recommendations

- DMR should continue to use a formal APA process for aquaculture leasing.
- DMR should continue to work proactively to inform the public on the lease process to make it less intimidating.
- DMR should provide more informal opportunities for information exchange (see A.2 of this section).

2. Local Input Prior to Application Submission

Issue Summary

At this time, DMR waits until an application has been deemed complete to hold the scoping session and notify riparian owners. In addition, the current hearing process allows for comment on a particular lease application only after a site has been selected. An earlier opportunity for input may allow the applicant to better address local concerns. The Task Force heard from many members of the public that they have felt that they did not receive enough advance notice of the proposed lease in order to participate effectively. They also heard that if the public is not made aware of a lease proposal until the application is complete, the ability for local input to provide direction to the applicant is reduced. Also at issue is the fact that an applicant cannot change the contents of an application after it is complete in order to meet a concern of a member of the public.

Findings

1. Public involvement prior to the submission of an application will benefit all involved by identifying issues early and allowing for flexibility in the proposal.
2. Moving the scoping session² so that it occurs prior to rather than after the application is submitted would allow for public input early in the process and may result in avoiding a contentious proceeding if changes are made to the proposal prior to submitting the application.
3. A scoping session may not be necessary in all cases.

² The “scoping session” is an informal public meeting, the basic of purpose of which is to familiarize the general public with the proposal, and to allow the public an opportunity to provide the applicant with additional local information and to ask questions of the applicant and the Department.

Recommendations

- A scoping session should be held before an application is submitted, unless DMR, the municipality, and the applicant agree that it is not necessary. (language for proposed changes to regulations is provided in Appendix A.I)

3. Public Information and Communication

Issue Summary

There is still a considerable amount of confusion among the general public regarding the lease process, i.e. how it works, what the criteria are for issuing a lease, how they can participate in the process, etc., especially in areas where few or no leases have been granted.

Findings

1. There is a need to inform the public regarding aquaculture in general, the specifics of the leasing process and opportunities for participation.
2. People who wish to provide testimony on a proposed lease may not understand the criteria that DMR is required to use in determining whether or not to grant a lease.
3. There is a need to inform the public regarding the roles of state and federal agencies in regulating aquaculture.

Recommendations

- The Task Force recommends that DMR work with Sea Grant and the Maine Coastal Program to update the existing aquaculture information brochure and circulate it widely.
- DMR develop a set of information posters to provide information on the lease process, particularly the decision criteria, to be used at the lease hearings and scoping sessions.
- DMR use the scoping session as an opportunity for informal education about the leasing process.

4. Conflict Resolution or Mediation Procedure

Issue Summary

The Task Force considered whether it would be beneficial to recommend that interested parties seek alternative dispute resolution to try to resolve outstanding issues prior to the hearing.

Findings

1. There are issues that arise during the leasing process that may be able to be resolved outside the DMR process, through voluntary alternative dispute resolution.
2. Conflict resolution or mediation procedures may be helpful in reducing subsequent litigation.

Recommendation

- DMR should identify mediation resources, make a list available to all parties involved in lease-related conflicts, and update the list annually.
- Conflict resolution or mediation should be a voluntary option for interested parties to pursue, outside the existing lease process.

B. Role of Municipal Government in the Leasing Application and Approval Process

1. The Timing and Adequacy of Municipal Involvement in the Lease Process

Issue Summary

Currently, municipalities are not involved in the lease process until an application is received and determined complete by DMR. This provides a town with multiple committees little time to react to the pending lease application. Some municipalities and local residents would like municipalities to be granted some jurisdiction in the lease decision-making process.

Findings

1. Information a municipality may have could save the applicant and DMR time and resources if it is considered earlier in the process.
2. Earlier participation of municipalities in the hearing process may help address concerns regarding lack of municipal jurisdiction over subtidal leasing.

Recommendations

- The pre-application meeting should be held in the municipality with the harbormaster and/or a municipal official, the applicant and DMR. (language for proposed changes to regulations is provided in Appendix A.I)
- A pre-application scoping session will be held unless the municipality, DMR, and the applicant all agree that it is not necessary. (language for proposed changes to regulations is provided in Appendix A.I)
- Jurisdiction over leasing in subtidal areas should remain with the state.

2. Mooring Fees

Issue summary

The Task Force discussed whether a municipality could and/or should charge mooring fees for boat, vessel, or structural moorings³ within the lease boundaries. The SAP member representing the municipalities recommended allowing the municipalities to charge fees for moorings based upon the acreage of the lease area. The Harbormasters Association recommended that mooring fees for aquaculture leases should conform to the particular area's fee schedule without the loss of revenue to the town, similar to rental moorings. There were concerns expressed that the use of elevated fees for moorings would be used to exclude aquaculture. Some members of the public commented that towns receive money from aquaculturists in other forms of revenue.

³ Note the distinction within this section between structural moorings, used to secure the equipment on the lease site, and boat and vessel moorings.

Findings

1. There is inconsistency along the coast with regard to how municipalities treat moorings for aquaculture sites, i.e., whether they charge mooring fees and how much they charge.
2. Leaseholders pay rental fees to the state for the lease.
3. Leaseholders pay other fees to municipalities (taxes, use fees, boat moorings etc).
4. Allowing municipalities to charge fees for moorings within the boundaries of the lease site would result in the leaseholder paying a municipality for the use of the State's submerged lands, when he or she is already paying the State an annual rental fee for the lease.
5. Exorbitant fees for moorings could be used as tool for excluding aquaculture.
6. Under current Maine statute, harbor masters may issue mooring permits for boats and vessels.
7. Harbor masters should not be permitted to require mooring permits for boats and vessels located within the boundaries of an aquaculture lease site.
8. Under current Maine statute, municipalities do not have jurisdiction over structural moorings used to secure aquaculture sites.

Recommendations

- Title 38, Chapter 1, §3 should be amended, consistent with the above recommendations, to clarify that municipalities do not have authority to determine the location of moorings associated with aquaculture lease sites, or charge mooring fees within the boundaries of aquaculture leases.

3. Intervenor⁴ Status

Issue summary

Currently, municipalities are granted intervenor status upon request. The SAP member representing the municipalities suggested that municipalities be given automatic intervenor status, without having to request it. It appears that at least some towns are not aware that they can request intervenor status. DMR staff commented that the primary concern about automatically granting intervenor status without an affirmative action by the town is that the State would be conferring upon them a legal status that they may not wish to have. It is unusual to have an intervenor who doesn't have an intention to participate in the lease hearing. It could also unnecessarily increase administrative costs.

⁴ Intervenor status is available to any person who is substantially and directly affected by the granting of an aquaculture lease application, and for any other agency of federal, state, or local government. An intervenor is considered a party to the proceeding. Each party must provide copies of all correspondence with the Department to all other parties and is notified of all communications between the Department and other parties to the aquaculture lease proceedings. An intervenor also receives a copy of the proposed decision and has 10 days to comment on the decision.

Findings

1. Intervenor status for municipalities need not be automatic, but should be made easy to attain.
2. The Department should take action to better communicate this option to the towns.

Recommendations

- DMR should create a form letter that is sent by DMR to the municipalities with the completed application that includes a box to be checked if the municipality would like intervenor status.
- At the pre-application meeting in the municipality, DMR should explain the opportunity for intervenor status to the municipality.

4. Intertidal Leasing

Issue summary

Within Maine's shellfish conservation statutes, §6673 permits a community actively engaged in a shellfish co-management program with the state of Maine the right to lease areas in the intertidal zone to the extreme low water mark within the municipality to individuals for the purpose of private shellfish aquaculture. This right became legal in 1911 when the Maine State Legislature passed a law giving selectmen within each town the right to lease up to one-quarter (25%) of the clam flats within its geographic limits, the other three-quarters left as common property for the public. At present, however, sufficient ambiguity exists within the law so that neither DMR nor Maine's coastal communities have a good understanding of how to affect a process that fundamentally enables individuals to farm clams on private leases rather than or in addition to, harvest commercially these bivalves from wild, public beds. The current statute is poorly drafted and does not reflect the true intention of municipal leasing of flats. The Task Force and the Department agreed that municipalities with a shellfish conservation program should be given full authority to lease flats for aquaculture.

Findings

1. Municipal intertidal leasing programs could provide significant benefits to the State, municipalities, their residents and the general public.
2. The current statutory language is insufficient and the statute should be amended to reflect the legislative intent.

Recommendations

- Amend the language of 12 M.R.S.A. §6673. (language for proposed statutory changes is provided in Appendix A.2)

5. Municipal Input on Lease Decisions

Issue summary

The Task Force heard from individuals who stated that DMR did not consider the concerns of municipalities and the people who live in the area, and that there should be greater local control over lease decisions, including the delegation of leasing authority

(similar to the delegation of issuing moorings and management of shellfish flats) to local authorities.

Findings

1. Municipalities should have some role in the lease decision process that requires the Department to consider the municipality's concerns.
2. Municipalities should not have the power to veto a lease application.
3. Decisions relating to the use of a public trust resource, such as submerged lands, should remain with the State, and in this case with DMR.

Recommendations

- A municipality should be permitted to recommend that the Commissioner establish certain conditions on a proposed lease and the Department shall consider any conditions recommended and provide a written explanation to the municipality if the condition is not imposed. (language for proposed regulatory changes is provided in Appendix A.1, section 2.37(2))

C. Decision Criteria for Granting Leases

1. Noise and Light

Issue summary

During the 1st session of the 121st Legislature, an additional decision criteria was added regarding the impacts of noise and light at the lease boundaries to address long-standing concerns about the external impacts of aquaculture lease sites. The Department sought input from the Task Force on proposed regulations, including in the case of noise, decibel limits to quantify the impact, as required in the statute. The commercial fishing industry expressed reluctance to establish a decibel level for an aquaculture activity that could easily be carried over to their industry. Some people felt that a lower decibel level is needed in quiet conservation areas. Members of the public commented that noise should be taken into consideration in the lease process, many not realizing the newly enacted statutory changes have added noise, light and visual impact as decision criteria.

Findings

1. DMR has developed proposed regulations in accordance with the new decision criteria that are intended to address concerns about the impacts of light from lease sites.
2. It is difficult to determine quantitatively noise impact from aquaculture facilities because ambient noise conditions are ever-changing.
3. Quantified noise levels would be difficult to enforce.
4. If a quantified noise level is accepted for aquaculture operations, legislation may follow that is directed at other coastal activities, including commercial fishing.
5. A more reasonable and enforceable approach to noise control is the mitigation of impacts through muffling, defined hours of operation, etc.

Recommendations:

1. Amend the statutory language to omit the charge to the Department to “quantify” impact and to add language regarding mitigation. (language for proposed statutory changes is provided in Appendix A. 3)
2. Regulations should set forth required mitigation measures for noise and light. (language for proposed regulations regarding noise and light provided in Appendix A. 4)

2. Visual Impact Criteria

Issue Summary

During the 1st session of the 121st Legislature, an additional decision criteria was added regarding the visual impacts of aquaculture. The Department drafted implementing regulations and sought input from the Task Force on proposed regulations. Members of the public commented that visual impact should be taken into consideration during the lease process, many not realizing the recent amendment to the statute.

A staff member from DEP gave a presentation to the task force on Chapter 315, which governs the assessment of visual impacts under the Natural Resources Protection Act. Some SAP members and members of the public support this approach and asked the Task Force to recommend that DMR adopt it for use in siting aquaculture facilities. Others commented that it is difficult to apply, that it shouldn’t be used when the view that is impacted is from a private residence, and that it could easily be brought over to be applied to other water-based industries and inhibit the working waterfront.

Findings

1. The Task Force supports the recent addition of visual impacts to the decision criteria.
2. Visual impact criteria should be designed so as to result in aquaculture activities having minimal visual impacts on the scenic landscape of the Maine coast, while allowing the practice of aquaculture along the coast.
3. Chapter 315 is concerned with views from public viewsheds. All aquaculture leases are located within public viewsheds when viewed from the water. However, many of the concerns expressed are related to views from private land, which are not protected under Maine law. Therefore different criteria than Chapter 315 need to be considered that would protect publicly accessible views, but not those of private landowners.

Recommendation

- Create regulations that set forth limitations on height, size, mass and color of buildings and equipment. (language for proposed regulations regarding visual impact criteria provided in Appendix A. 5)
- DMR should not adopt the method used in Chapter 315 in aquaculture lease siting.

3. Sufficiency of Existing Decision Criteria

Issue Summary

The Task Force reviewed the decision-making criteria for granting leases to determine if any major issues were not being addressed. Members of the public commented on several issues that are not currently included as decision criteria, including impacts on property values, impacts on businesses on land, impacts on conserved lands, the economic value of aquaculture as opposed to other uses, etc. There was particular concern that the lease process does not allow for consideration of cumulative impacts and that it is reactive.

Findings

1. The Task Force determined not to recommend the following requests made by the public for inclusion into the decision criteria:
 - Private property values: As manager of the public trust, under current law, the Department cannot take impacts to private property into consideration in making an aquaculture lease decision (see Section IV).
 - The view of riparian landowners currently is not, and should not be considered a decision criteria. The new visual impacts changes to the statute and the regulations should be given time to be implemented.
2. The Department should consider the other aquaculture leases in the area when evaluating the application under the decision criteria.

Recommendations

- Amend the statute to reflect that the Department will take the number and density of all aquaculture leases in an area into consideration in evaluating the lease under the decision criteria. (language for proposed statutory changes provided in Appendix A.3)
- See specific recommendations from other areas of this document
- DMR should not consider the view of riparian landowners in making lease decisions.

4. Final Decision-Maker

Issue Summary

The Task Force discussed whether the final lease decision should be made by the DMR Commissioner, as is currently required in law or a larger Board made up of members of the public. Members of the public commented regarding the Commissioner's conflicting role as promoter and regulator and expressed concern regarding a perceived bias on the part of DMR in favor of the aquaculture industry. Some commented that there should be a decision-making board of members of the public. An Assistant Attorney General gave a presentation to the Task Force on the Public Trust Doctrine that assisted the Task Force in making its determination on this issue.

Findings

1. The Commissioner has access to the knowledge and expertise to make competent decisions regarding aquaculture lease proposals.

2. The Commissioner is entrusted to manage a public resource and uphold the public trust doctrine and is the appropriate party to make a decision in accordance with those duties.
3. The dual role of regulation and industry development at DMR has resulted in blending of roles and responsibilities in the agency and has contributed to negative public perception of DMR's intentions when conducting regulatory review.

Recommendation

- Retain the current system in which the Commissioner makes the final lease decision.
- Move activities related to development of the aquaculture industry from DMR to DECD and promotion to the Dept of Agriculture (see section IX).

D. Lease Renewals and Transfers

1. Procedure for Lease Renewals and Transfers

Issue Summary

The current procedure for lease renewals and transfers requires the Department to hold a public hearing when five or more requests for a hearing are received. There were concerns expressed that opening a lease renewal to a hearing process is unfair to a leaseholder who has complied with the lease conditions and has invested in the business for ten years. Additionally, there was a concern for a need for some certainty in making an investment in aquaculture with regard to both a renewal and a transfer – that if you abide by all the conditions of your lease, you can continue your business. There was also a concern expressed that there may be a business need to transfer a lease, and that it should be a smooth process.

Findings

1. The requirement that a hearing be held upon five or more requests may result in providing an opportunity to unnecessarily make a leaseholder go through a long, expensive hearing to defend his or her operation.
2. The ability to smoothly transfer a lease is important from a business perspective.
3. The criteria for renewal and transfer are sufficient to leave the decision with the Commissioner without the need for a hearing.
4. A 30-day comment period should be provided, but a hearing is not necessary for transfers and renewals.
5. The Commissioner should retain the discretion to hold a public scoping session or an adjudicatory hearing if he or she determines that one is necessary to obtain more information.

Recommendations

1. Delete the statutory requirement for an adjudicatory hearing upon five or more requests for both a renewal of a lease and a transfer of a lease. (§6072(12) and (12-A))

2. Replace the hearing procedure with a 30-day comment period in which the Department will accept written comments.
3. The Department shall have the discretion to hold a hearing for a renewal or a transfer if it deems it necessary.
4. The Department may also hold a less formal scoping session for a renewal or transfer if it deems it necessary.

2. Fees for Renewal and Transfer Applications

Issue Summary

DMR currently does not charge an application fee for renewal and transfer applications and this is a potential source of revenue for the Department that may be used to improve the lease process.

Findings

1. A fee assessed for the application for a renewal or transfer of a lease could assist with the administrative cost of processing the applications, such as staff time, mailings, and public notices in the newspapers.
2. Fees for lease transfers should be assessed in order to capture a portion of the substantial value of such transactions.

Recommendation

- DMR should amend the regulations to assess a reasonable fee for renewal and transfer applications, following the completion of the comprehensive fee review that DMR has undertaken.

E. Administrative Issues

1. Lease Acreage Limit

Issue Summary

Currently the statute states that a person may not hold leases covering an aggregate of 250 acres. There was concern expressed that new requirements for fallowing in the finfish industry has made it difficult to stay under the minimum acreage and have a successful operation. Others were concerned that there could be a monopoly by one company if there is no limit, and thus pushing out the small farmer and that large international companies could profit from the use of public waters.

Findings

1. The requirement for fallowing has created a need for more lease acreage in order to have a successful operation.
2. An acreage cap may discourage larger firms from doing business in Maine.
3. There should be a system that allows for a larger amount of acreage to be held by the larger companies, while encouraging the smaller-scale farmers.

Recommendation

- Increase the maximum lease acreage to 500 acres. (change 250 to 500 in §6072(2.E.), (12), and (12-A))
- Create incentives for those who remain under a certain acreage through tiered rental fees (see rental fee section).

2. Enforcement

Issue Summary

The Task Force discussed whether enforcement by DMR is sufficient to ensure the leaseholders are in compliance with their lease conditions, and that their property is being adequately protected. DMR informed the Task Force that until very recently, enforcement has been reactive, relying on citizen complaints. DMR is now beginning to require Marine Patrol Officers to annually inspect aquaculture sites.

Findings

1. DMR has developed a new initiative of annual inspections of leases by Marine Patrol.
2. DMR's current enforcement budget is not sufficient to provide an appropriate level of enforcement.

Recommendation

- DMR should assess the results of the new enforcement initiative. (Appendix E: Enforcement Protocol)
- The Task Force supports more funding for a greater enforcement effort.

3. Lease Fees and Fines

Issue Summary

The Task Force discussed whether the annual rental fee of \$50 per acre should be increased and whether fines should be assessed for lease violations. Members of the public commented that leaseholders pay a relatively low fee for the use of public waters. Others commented that leaseholders pay enough in rental fees, penny per pound under FAMP, and application fees. DMR is undertaking a comprehensive review of the entire fee schedule for aquaculture with DEP, including application, lease and monitoring fees, and developing a schedule of fines for aquaculture lease violations.

Findings

1. Rental fee is low and should be increased, without being unduly burdensome.
2. Fines should be assessed for lease violations.

Recommendation

- Lease rental fees should be increased and should vary, depending on the activity on the site. A tiered rental fee system should be established which correlates rental fees with the type of activity and the size of the lease. Any changes to lease

fees should only be considered as part of DMR's complete review of all aquaculture fees and should not be unduly burdensome.

- A schedule of fines for lease violations should be developed to aid with enforcement capabilities.

4. Time Period of Site Review

Issue Summary

Currently, the period within which DMR can conduct a site visit is statutorily limited to April 1st to November 15th. This limitation was designed to ensure that the site would be visited during the biologically active time periods. However, it prevents DMR from visiting the site at other times that may be important to its evaluation, e.g. prior to the start of a fishing season. Members of the public commented that the Department does not visit a site at the right time to evaluate a particular aspect of the site. DMR commented that there are some sites that could be adequately assessed outside the time period and that the time period constraint often ties up the lease process.

Findings

1. The time period puts unreasonable constraints on the Department to process leases, and may delay the implementation of the lease for the applicant.
2. In some cases, the information necessary to evaluate a site should be obtained outside the established time limit (e.g. prior to the start of scallop season).
3. A pre-application meeting and scoping session will aid the Department in identifying issues that would guide the appropriate time for a site visit.

Recommendations

- Eliminate the established time period of April 1st to Nov. 15th within which the Department may conduct its site visit. (Delete the time period from §6072 (5-A))
- DMR is encouraged to conduct site visits during times appropriate to characterize conflicting uses or the ecological significance of the site.

5. Polyculture Application

Issue Summary

There is a need to understand the distinction between a multiple species lease application and one that is intended for more than one species in a polyculture process. It is in the best interest of the state to promote the further use of polyculture in aquaculture.

Findings

1. A distinction should be made between a multiple species application and one that is for polyculture.
2. There is a potential benefit both economically and environmentally for the practice of polyculture and some incentive through the lease process should be considered to allow for its implementation and further practice.

Recommendations

- DMR should create a written definition of the practice of polyculture.
- DMR should consider developing some reasonable incentive for the expansion of polyculture type lease applications.

F. Experimental Leases

Issue Summary

There were some concerns expressed regarding the experimental lease process. Some feel the process is onerous and needs to be changed with regard to the public hearing requirement and the lease start date.

Findings

1. Experimental leases are short-term and are designed to encourage experimentation and thus the process for obtaining an experimental lease should be streamlined compared to non-experimental, or standard, leases.
2. The requirement for a public hearing if five or more people request a hearing is unnecessary.
3. Use of a public scoping session similar to what is recommended for other leases would be an effective way to inform the public on an informal basis.
4. Given that experimental leases for commercial purposes are non-renewable, the public will have a formal opportunity to comment if and when an experimental lease holder applies for a standard lease.
5. Given that experimental leases have a maximum term of three years, the start-date of the lease should be specified by the applicant after the lease is approved, in order to take advantage of the subject specie's biological calendar.

Recommendations

- Amend the statute to eliminate the requirement for a public hearing upon five or more requests.
- DMR should have the discretion to hold a public scoping session for experimental leases.
- DMR should amend the regulations to allow an applicant to define the start date as any date within 12 month of approval of the experimental lease application. (add to lease regulations section 2.64(7): The term of an experimental lease shall run from a date chosen by the applicant, within 12 months of the date of the Commissioner's decision, but no aquaculture rights shall accrue in the lease area until the lease is signed.)

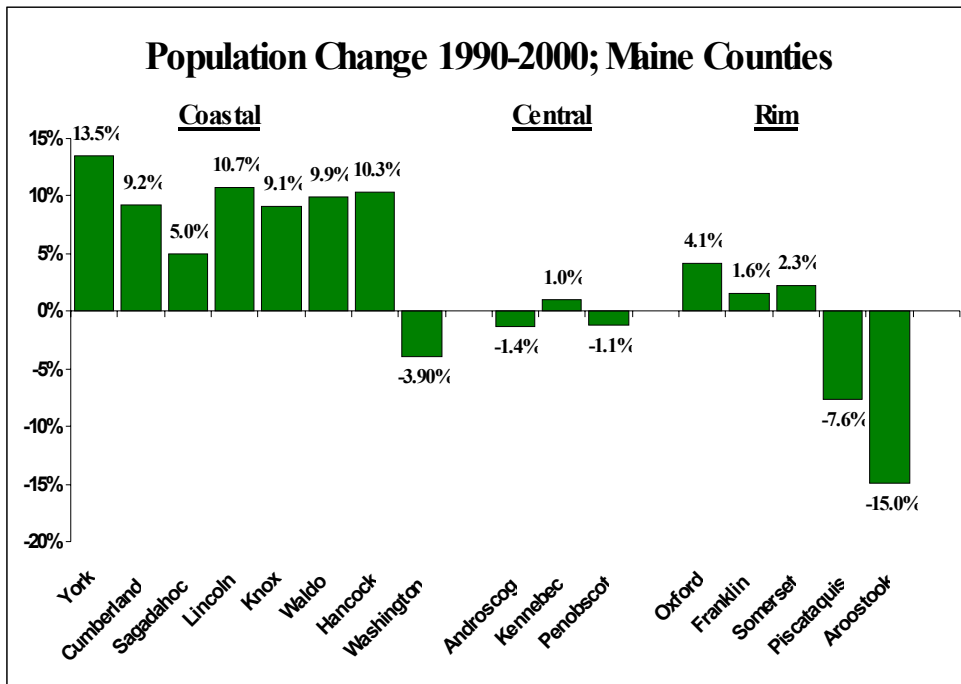
VII. IMPACTS OF AQUACULTURE ON OTHER USES – TOURISM, RECREATION, CONSERVED LANDS AND COMMERCIAL FISHING

The Task Force wanted to include some information regarding the changing demographics of Maine's coast in this section. Some transition text will be required to lead the reader from this information into the following sections.

Changing Demographics Along a Changing Coast

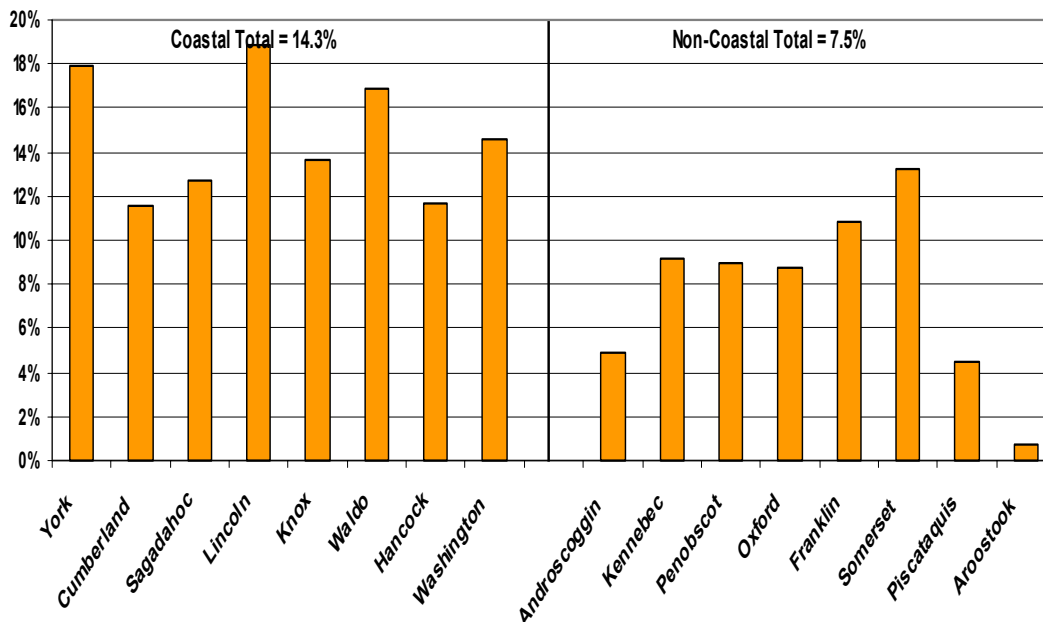
By all measures, Maine is a rural state, and growth projections for the future are moderate. However, the coastal regions of Maine, particularly the southern and mid-coast areas, are already more densely settled and growing faster than the state as a whole. Maine's coastal zone (defined as the municipalities and unincorporated areas that border tidal waters) comprises 12% of the State's land area but is home to about 44% of the state's 1.275 million population. Coastal municipalities have an average density over six times greater than the balance of the state (166 persons per square mile compared with 26 persons per square mile inland). Compared to inland Maine, the coast is a densely populated region with a thriving economy, yet it is not a homogeneous region by any means; population density and economic activity generally thin out from west to east along the coast.

Between 1990 and 2000, the population of Maine's coastal communities increased by 5.6%, about 30,000 people, while the remainder of Maine increased by about 2.9%, or roughly 17,000 people.

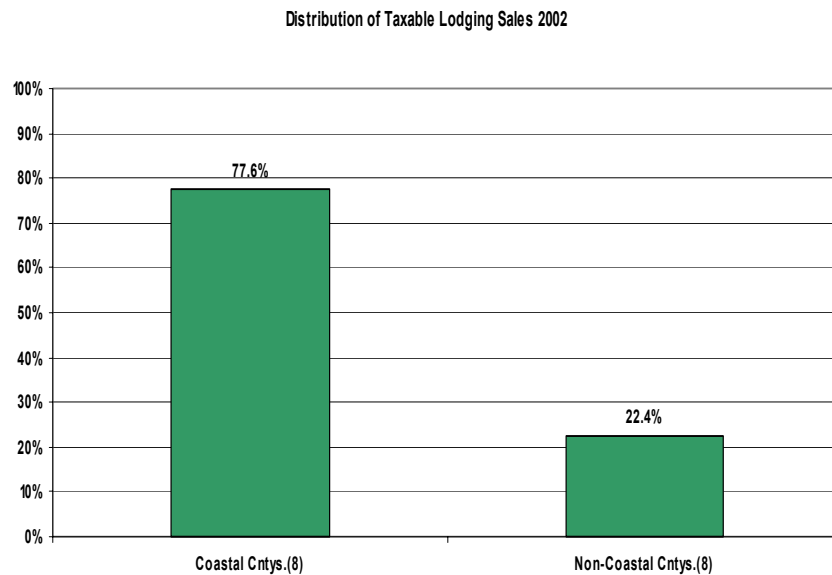


Coastal population growth and, equally important, the increase in second home development, is reflected in construction activity along the coast. According to the 1990 US Census, the eight coastal counties (not including Penobscot) had 306,712 housing units or 52.2 percent of the State total. Between 1990 and 2000 coastal counties saw an increase of about 14.3 percent or 43,840 units, while inland counties grew about 21,016 units or 7.5 percent.

County Housing Unit Growth 1990-2000



Last but not least, the coast is the destination for most of the 8 million-plus people who visit Maine each year. Tourism is a large and vital component of Maine's coastal economy, but research has not been sufficiently detailed to yield precise regional numbers. However, State lodging sales tax data provides a basis for rough approximations of tourist spending by region and county. According to Longwoods International, a Toronto-based tourism research firm, total tourist expenditures in Maine in 2001 were approximately \$5.6 billion. York and Cumberland counties alone likely account for about one-half of all Maine tourist spending (includes residents). Hancock, which contains Acadia National Park, accounts for another one-seventh of the State's tourism market. Collectively, the eight Coastal counties account for about three-fourths of all Maine tourist expenditures.



Though this data about coastal population growth, housing development and tourism is instructive about population pressure along the coast, it only tells part of the story. A substantial portion of coastal population growth and construction, particularly on coastal properties, is the result high net worth individuals, families and retirees acquiring coastal property due to the quality of life such property provides. This increasing sector of coastal communities is a powerful economic force in coastal communities as a major driver of construction activity. Equally important, this sector's wealth was earned elsewhere and they are not tied to the coastal economy for their income. Thus their interests tend to favor aesthetic and recreational uses as opposed to harvesting and industrial uses of coastal resources. This creates the potential for conflict between the growing sector of new residents of coastal communities whose livelihood is not tied to the coastal economy and those residents and business owners whose livelihood is dependent on commercial use of Maine's marine resources.

A. Tourism

Issue Summary

Tourism is the state's largest industry and its continued vitality is of critical importance to the health of the Maine economy. Tourism directly generates more than seven percent of Maine's gross state product and over ten percent of employment.⁵ Tourism and aquaculture are two business sectors that are dependent on healthy and abundant natural resources. For aquaculture, good water quality is the primary concern. For coastal tourism, various features of the Maine coast – working waterfronts, small villages, islands, tranquility, beaches, scenery, sailing opportunities and the presence of countless other unquantifiable attributes are important to lure new visitors and retain repeat customers.

Currently, tourism operators and members of the public bring issues related to perceived impacts on tourism, scenic areas, etc. into the lease hearings. No criteria exist in the statute to consider economic or scenic impacts on uplands. In Section V of this report, it was noted that case law clarifies that the state is to consider only public uses of submerged lands when considering impacts on public trust resources. Two industry groups, the Maine Innkeepers Association and the Maine Restaurant Association have suggested that new criteria be added to the leasing process to allow consideration of the impact on shoreside businesses.

How this Issue was Studied

The Task Force was asked to evaluate the impact of marine aquaculture on coastal tourism. Little to no empirical data exists that documents the impact of aquaculture on the tourism industry in Maine or elsewhere. Therefore, the Task Force relied on information provided at public meetings and solicited information from statewide organizations that represent multiple industry sectors.

The Task Force received input at public hearings from several proprietors of tourism related businesses. Much of the testimony presented at the Task Force's public hearing in Blue Hill was related to the scenic, recreational and inspirational qualities of the region. Written testimony was provided at the hearings by the Maine Innkeepers Association and the Maine Restaurant Association. At their November 6, 2003 meeting, the Task Force heard presentations from an invited panel comprised of representatives of the Maine Department of Economic and Community Development, the Maine Restaurant Association and the Maine Tourism Association. In preparation for the panel discussion the latter two organizations provided a letter of comment and a white paper, respectively, for consideration by the Task Force.

⁵ Maine Department of Economic and Community Development, Draft Recommendations for the Blaine House Conference on Natural Resource-Based Industries, 2003.

Findings

1. The Task Force was not able to quantify the effects of aquaculture on the tourism industry. There was no direct evidence of a negative effect on tourism, and some anecdotal evidence of positive impact.
2. Within the tourist industry there is a polarization of opinions about aquaculture. Some sectors of the industry embrace aquaculture as a compatible activity that offers their touring customers an opportunity to learn about Maine's working waterfront, and proudly feature Maine-grown Atlantic salmon and shellfish on their menus. Others feel that visitorship will decline at their businesses due to the presence of an "industrial" facility in adjacent waters, and that visitors will not use beaches and other shoreside amenities due to perceived threats to water quality. Public testimony was received from several proprietors of tourist-dependent businesses citing a perceived negative impact should an aquaculture business be sited adjacent to their facility. Overall, the number of direct complaints to tourism industry groups about the potential for aquaculture to negatively affect tourism has been small.
3. The Task Force noted that most of the information presented to them about the negative effects of aquaculture on tourism were perceived impacts associated with potential future aquaculture development.
4. The Task Force heard from others during public meetings that coastal tourists, particularly recreational boaters (kayakers) visit aquaculture lease sites while touring. The Task Force noted that aquaculture and fishing play a part in providing the environment that travelers in Maine are looking for – active fishing villages and the presence of an intact working waterfront. The Task Force finds that there is an opportunity for synergism and partnerships between the tourism and aquaculture industry that can support collaborations. An educational campaign about Maine's working waterfront (including aquaculture) could better inform visitors traveling in coastal Maine and would build support for multiple, compatible uses of the marine and shoreside environs.
5. The Task Force did not consider it necessary to amend the leasing criteria to consider impacts on shoreside businesses. Other recommendations of the Task Force related to mitigation of noise, light and visual impacts, if implemented, will act to mitigate effects on shoreside businesses without the need for additional leasing criteria. Other recommendations concerning preapplication scoping sessions should help identify areas of potential conflict between aquaculturists and tourism interests prior to the formal application process.

Recommendation

- The Task Force recommends that state agencies with responsibility for tourism, marine resources and coastal planning work to foster a collaboration between tourism and aquaculture, two important elements of Maine's natural resource-based economy. To this end, the Maine Coastal Program at the State Planning Office should work with the existing Working Waterfront Coalition (a diverse

group of government, industry and nonprofit groups with an interest in the conservation of Maine's marine-related economy) to develop an informational campaign aimed at coastal residents and visitors. The theme of the campaign should revolve around the many benefits of Maine's multi-use waterfronts and provide information of interest to the traveling public about the sights and sounds associated with Maine's working waterfront. The Maine Coastal Program should also consult with the Maine Department of Economic and Community Development, Office of Tourism and its advisory council to ensure a high quality campaign. Outreach materials should have broad appeal for use at tourism businesses, visitor centers and municipal offices.

B. Recreation

Issue Summary

The Task Force was asked to make an assessment of the impacts of aquaculture on recreational activities. This was an extremely broad area to examine as "recreation" can include waterside activities such as boating, swimming, fishing, hunting and landside activities such as recreating at coastal parks and other conserved lands along the shoreline. (See also sections on conserved lands and tourism)

How this Issue was Studied

The Task Force invited testimony about recreational impacts at their public meetings and invited the Stakeholder Advisory Panel member representing recreational issues (Pat Keliher, formerly of the Coastal Conservation Association) to address the Task Force at their meeting on November 6, 2003. Mr. Keliher submitted a white paper for consideration by the Task Force.

Findings

1. The current statute and regulations require that during the lease process, the Commissioner take into consideration the effect of the proposed activity on:
 - existing recreational navigation and fishing activity;
 - all water-related uses of the lease area; and,
 - the public's use and enjoyment of parks, beaches and launching facilities.
2. Information submitted by the DMR hearings officer indicates that at least two leases have been denied (Bartlett Island, 1999 and Smith Cove, 2003) based on interference with existing recreational uses. Seven other denials have been based in whole or part on navigational concerns, and it is assumed that recreational boaters use these existing navigation areas.
3. The Task Force heard testimony that recreationalists (kayakers, recreational fishermen on guided excursions) are interested in aquaculture as a learning opportunity and seek out information about industry and visit site operations.
4. Based on the information presented, the Task Force found that the existing lease criteria are sufficient in evaluating and minimizing the impact of aquaculture on recreational uses and therefore no additional measures are needed at this time.

Recommendations

- None at this time.

C. Conserved Lands

Issue Summary

Consideration of the impact of a proposed aquaculture facility on public recreation lands is currently limited to publicly-owned beaches, parks and docking facilities within 1000 feet of the proposed facility. Other conserved lands along Maine's coast have important ecological, recreational and/or scenic attributes and are protected through ownership by governmental agencies. These lands do not currently fall within the purview of the state's leasing criteria, yet the public enjoyment of these lands may be compromised by inappropriate siting or management of an aquaculture facility. Failure to consider the impact of a proposed facility on these lands may not only result in unnecessary harm to the ecological, recreational or scenic attributes of these lands, but also in a loss of public confidence in a leasing process that fails to consider the potential for such harm.

A variety of public lands are also protected for conservation purposes through ownership by non-governmental conservation organizations or by conservation easements held by governmental agencies and non-governmental conservation organizations. Whether these categories of conserved lands offer equivalent value for the public and warrant additional consideration during the leasing process was a topic of extensive discussion by the Task Force.

How this Issue was Studied

Task Force members invited Maine Coast Heritage Trust (MCHT) and their consultant, Terry Dewan (landscape architect) to present a primer on visual impact assessment techniques. This presentation was heard by the Task Force at their Blue Hill meeting on September 25, 2003. MCHT and Mr. Dewan also presented a proposal containing recommendations for consideration of conserved lands during the aquaculture leasing process.

On September 26, 2003, the Task Force took a boat trip around Blue Hill Bay and viewed several conserved islands in the Bay and several aquaculture facilities. TF members went ashore on Hardwood Island and met with island owners regarding their experience having a salmon farm adjacent to their conserved property. Acadia National Park staff was also present on the field trip and later joined a panel discussion to discuss their interaction with DMR and lease applicants during the facility siting and leasing process and afterwards via cooperative agreements with aquaculturists.

Two DEP staff members addressed the Task Force on September 26th concerning DEP's new rules for evaluation and consideration of scenic impacts under the Natural Resources Protection Act.

Finally, members of the public spoke of the value of conserved lands and the need for additional protection of these lands during the facility siting process.

Findings

1. Since the adoption of the original lease criteria, public investment in conservation lands has significantly increased through the state's Land for Maine's Future Program and through other federal, state and local land conservation initiatives. A broad range of conservation lands beyond parks, beaches and docking facilities are now protected for public use and enjoyment and this trend continues along the coast.
2. Conservation lands and the use of public waters for aquaculture can both provide public benefits. The Task Force recognized that protection of the public benefits associated with conserved lands warranted a change in the current leasing criteria.
3. The Task Force had lengthy discussions about the range of conservation lands protected by public and private entities along the Maine coast. Conservation objectives, public access opportunities and the amount of public funds invested in the land differs widely from property to property. With the intention of focusing on only those lands that clearly offer maximum benefits to the public, the Task Force found that:
 - Conservation easements on privately-owned land by their terms cannot and do not restrict activities in the adjacent public waters. They also do not protect the water viewscape of the owner of that land. Consideration of the impact of a proposed aquaculture facility on that view should not fall within the purview of the consideration of the impact of a proposed aquaculture facility on conserved lands.
 - Privately owned lands protected by fee ownership and conservation easements that limit development make an important contribution to public and private land conservation goals. However, those that are not publicly-owned or those that have not received significant public funding through the Land for Maine's Future Program provide a less easily identifiable measure of public benefit.
 - The Land for Maine's Future Program, often works with non governmental organizations in land conservation partnerships. In addition to fee acquisition, LMF funds are used to purchase (or partially finance the purchase) of conservation easements, where fee ownership of the property rests with a non governmental conservation organization. Public access to LMF properties is guaranteed, and the lands are subject to management plans that protect the public's interest. Because of these attributes, properties acquired with LMF funds, regardless of ownership, should have consideration during the leasing process.
 - Publicly owned lands that are open to the public for their use and enjoyment and Land for Maine's Future properties, were found to be the only categories of conserved lands warranting additional scrutiny during the leasing process. Conserved lands in private ownership (with the exception of LMF properties)

were seen as offering a less easily identifiable and therefore, secondary, level of public benefit.

4. Providing for consideration during the leasing process of the impact of aquaculture facilities on those conservation lands that offer the highest degree of public benefit will allow for problem-solving during the siting process, allow for adaptive solutions and provide incentives to make aquaculture facilities compatible with adjacent conservation lands. . If such compatibility cannot be achieved, then the respective public benefits of each must be weighed in the decision-making process.
5. The Task Force also discussed, at length, the current leasing criteria that limits the evaluation of the impact on public recreational facilities to an area within 1,000 feet of the facility. Some members of the Task Force were in favor of removing the 1,000 ft. criterion, allowing the impact of a proposed lease to be evaluated regardless of its distance from public facilities. Testimony from aquaculturists and information from the Aquaculture Hearings Officer showed that this 1000 ft “zone” is typically avoided by those wishing to site a new facility. Therefore removing the 1000 foot restriction would remove an incentive for operations to automatically move outside the 1000 foot boundary. In many cases, however, siting an aquaculture facility close to shore rather than farther out can better protect the public’s use and enjoyment of adjacent public lands and facilities, especially when Maine’s convoluted shoreline offers opportunities to “tuck” facilities in closer to the shore, rather than siting them in exposed areas. The Task Force found that careful consideration is required in determining if an operation within 1,000 ft of publicly held conservation land does not interfere with public use or enjoyment.
6. Other modifications to the leasing process either already in effect, or proposed in other sections of this report, will help mitigate potential impacts on conserved lands.
 - a. Preapplication meetings and scoping sessions involving the members of the local community will help highlight potential conflicts with conserved lands that should be addressed in the leasing process.
 - b. Consideration of potential noise and light impact from aquaculture facilities will help address potential impacts on conserved lands.
 - c. A recent amendment to the lease criteria requiring consideration of the impact of aquaculture on significant wildlife habitat and on ecologically significant flora and fauna in surrounding upland areas will help address potential impacts on conserved lands that host important ecological resources.

Recommendations

- Amend 12 MRSA Chapter 605 Section 6072 (7-A) (F), to read as follows:

F. The lease does not unreasonably interfere with public use or enjoyment within 1,000 feet of a) beaches, parks, docking facilities owned by federal, state or municipal governmental agencies and b) public use or enjoyment of certain conserved lands. For purposes of this paragraph, “conserved lands” shall mean a) land in which fee ownership has been acquired by the

local, state or federal government in order to protect the important ecological, recreational, scenic, cultural or historic attributes of that property and b) land that has been protected through fee ownership or conservation easement with funding from the Land for Maine's Future Program.

SPO shall maintain a list of conservation lands as defined above. DMR will request this information from SPO prior to the pre-application scoping session (a modification to the leasing process recommended elsewhere in this report.)

- Adopt regulations that provide standards for assessing the impact of a proposed aquaculture facility on the public use and enjoyment of conserved lands.

D. Commercial Fisheries

Issue Summary

The primary issue regarding commercial fisheries is the cumulative loss of fishing bottom. The commercial fishing sector has expressed concern that fishing bottom changes over time while leases do not. Fishermen also noted that the DMR site review is inadequate - that it is conducted at times of the year when the fishery is not present. Loss of fixed gear (e.g. lobster traps) is also a concern, and concerns over chemical use are similar to those of the general public. Many fishermen acknowledge that as the industry grew, conflicts arose, some of which were resolved directly with industry members. Over time, the amount of conflict has decreased.

How this Issue was Studied *(paragraph to be elaborated for next iteration by staff)*

- *Eastport panel*
- *Lack of lobster industry input*
- *SAP input from meeting in Belfast regarding noise*

Findings

1. Commercial fishermen are generally concerned about the continued expansion of aquaculture.
2. Loss of fishing bottom and pollution are concerns most commonly heard from the fishing sector.
3. Because fisheries are dynamic, moving in location with season and years, fishermen are concerned that the site review is conducted at times of year when DMR staff could miss important fisheries resources.
4. Input from the commercial fishing sector indicates that historically conflicts have occurred; Maine and the industry have worked to resolve this as a major issue.
5. Traditional fisheries are protected from aquaculture in the current leasing process.
6. Fishermen expressed concern that if a quantified noise level is accepted for aquaculture operations, legislation may follow that is directed at commercial fishing.

Recommendations

- Lease site review window should be removed to enable DMR to conduct reviews when fishery potential is greatest. (Note: this may require multiple visits.)

VIII. ECOLOGICAL HEALTH

Aquaculture has the potential to cause undesirable impacts to surrounding ecological health and biological communities. Although there is limited evidence that marine aquaculture in Maine has caused any significant long-term impacts to the ecological health in the vicinity of farms, there is legitimate concerns that, without proper constraints and the use of prudent husbandry practices, aquaculture can cause significant short and long-term negative impacts on the environment. The most significant risk to the environment and biological communities comes from finfish aquaculture which, since there is active feeding of the animals, is considered to be causing a discharge to the water. To minimize the potential impact of discharges and other features associated with finfish aquaculture operations, the DMR implemented a rigorous monitoring program in partnership with the DEP over 15 years ago. This program, the Finfish Aquaculture Monitoring Program (FAMP) has been funded by a \$0.01/lb tax on landed Atlantic salmon and has provided a mechanism for regular assessment of the surrounding water quality and the benthos in the immediate vicinity of salmon pens. Using a combination of water sampling, benthic sampling, and video surveillance, the FAMP has provided baseline information for new installations, and has provided the basis for action by the agency and the farm operator to either improve husbandry practices or to relocate the pen to a more appropriate site. At present, a new waste permit to address discharges from marine finfish aquaculture facilities (Maine Pollutant Discharge Elimination System or MEPDES) is being implemented. This new permit will require more sampling however, at present, it is unclear how this new permit and monitoring protocol will be implemented by the State, how these permit conditions will relate to the FAMP, and what role the industry will have in the process.

How this Topic was Studied

A combination of white papers, expert panels, stakeholder discussions, comments from the public, field trips and laws, regulations and policies were studied and considered. The Task Force was especially interested in identifying problems and concerns specific to Maine and what changes to aquaculture regulations and management should be made to mitigate and/or prevent them.

A. Nutrient Enrichment

Aquaculture operations, by their nature, result in high concentration of animals in relatively close quarters resulting in higher levels of waste byproducts being discharged in an area. Although these nutrients occur naturally and are necessary for plant and microbial life, in excess, they can enrich the water column to a point where oxygen depletion, nuisance and harmful algal blooms, and species shifts cause undesirable impacts to other species and uses. Both finfish and shellfish aquaculture alter the nutrient dynamics of a waterbody, but finfish aquaculture has a greater effect than shellfish due to the fact that finfish culture requires an input of material (feed) not already present in the local system. Coastal nutrient enrichment due to

aquaculture emerged as a concern to the state over a decade ago and has been the focus of monitoring efforts.

Limited work has been conducted in Maine to assess the biological carrying capacity of the bays and to determine how much cumulative impact might be occurring when several operations occur in a given waterbody. Evidence from biological oceanographic studies indicates that in some locations such as Cobscook Bay, the greatest contribution of nutrients to our coastal waters comes from offshore in the Gulf of Maine. In other places, nutrient inputs are derived from anthropogenic sources that are delivered to coastal sites from riverine and other land-based sources. Aquaculture is just one of several other contributors of various nutrients to the coastal waters including: atmospheric deposition, non-point source runoff, municipal sewage treatment facilities, industries, watercraft.

Advances in oceanographic modeling may provide tools in the future for assessing the potential impact for aquaculture operations, but these models require the input of area-specific information that is expensive to acquire and not readily available. Therefore DMR relies on monitoring programs rather than models at this time.

Polyculture⁶ has the potential to reduce the impact of nutrient enrichment from finfish farming. Raising finfish that release nutrients alongside shellfish and marine algae that remove nutrients, results in less net loading to the environment. Polyculture in New Brunswick shows promise and could be applied here in Maine.

Findings

1. Nutrient enrichment from aquaculture is not currently causing ecological harm. However, there is insufficient data determine whether nutrient enrichment may be causing effects such as shifts in phytoplankton community composition, increases in benthic algal production, and exacerbating harmful algal blooms (HABs).
2. Aquaculture is not the only source of nutrients to a waterbody. Private property owners, atmospheric deposition, municipal, recreational, and industrial discharges and even natural sources all contribute to the nutrient budget of a waterbody.
3. Aquaculture is dependent on clean water and is potentially vulnerable to other types of pollution. Certain areas of the coast are closed to aquaculture due to pollution.
4. The implementation of the MEPDES discharge permit will address nutrient enrichment from finfish aquaculture.

Recommendations

- Support research to study and assess whether specific relationships exist between finfish aquaculture and phytoplankton community shifts, HABs, and benthic algae. Additional studies should be supported to determine if aquaculture discharges can be managed through polyculture or other means.

⁶ Polyculture is the integrated culture of two or more species whereby one species contributes to the growth of another (e.g. growing marine algae and / or mussels adjacent to a finfish cage).

- Explore incentives in the leasing process for aquaculturists to employ methods such as polyculture to reduce nutrient enrichment.
- The Task Force requests that the Legislature charge DEP to review discharge permits to marine waters to ensure that cumulative impacts from all sources to the receiving water are considered.
- Maine should continue to support efforts by DMR and DEP to remove all sources of pollution along Maine's coast.

B. Organic Enrichment (Solids)

Both finfish and shellfish aquaculture result in organic material being deposited on the bottom. While shellfish deposition is mostly a result of active metabolism of naturally occurring phytoplankton, solids from finfish can appear considerable. The impact of organic loading has been the subject of many scientific studies which has resulted in the development of several predictive models. Impacts follow the classic Pearson-Rosenberg model of enrichment. First, the number of individuals and number of species increases followed by shift to a few opportunistic species in great numbers. Left unchecked, the system progresses to near azoic⁷ conditions. Researchers have found that impacts are generally confined to the area beneath the pens, and are temporary (on the order of months to several years) with recovery beginning immediately after organic loading is reduced. Rarely do the impacts extend more than tens of meters beyond the pen shadow.

Findings

1. Available evidence indicates that organic loading to the bottom from aquaculture is confined to the lease site, reversible and not serious.
2. Maine has in place policies, standards and permits to monitor for and prevent unreasonable adverse impact from organic enrichment.

Recommendations

- DMR and DEP should continue to manage aquaculture in a manner that will maintain a diverse benthic species composition and confine impacts to the immediate lease area.
- Support applied research with the industry to develop effective Best Management Practices⁸, standards, and monitoring regimes.

C. Toxic Contaminants / Therapeutants

Because of the concentrated nature of husbandry, toxicity is an issue with virtually all forms of plant and animal husbandry, even organic husbandry (e.g. phytotoxin accumulation). Sources of toxic contaminants in Maine aquaculture include bio-concentration of contaminants from feed stock, feed additives, therapeutants,

⁷ Azoic is a condition in which animal life is absent.

⁸ Best Management Practices (BMPs) are husbandry practices designed to maximize efficiency and minimize external impacts. In the case of finfish aquaculture, examples include the use of underwater cameras to monitor feed usage, regular inspections of nets to prevent escapement, etc.

pesticides, antifoulants, disinfectants, petroleum and cleaning agents. Many of these chemicals are the very same ones used by recreational boaters and shorefront property owners and are discharged to the environment in municipal wastewater.

Contemporary husbandry practices and recent laws have reduced use of most of these chemicals in marine aquaculture. For example, tributyl tin has been banned for use as an antifoulant on nets. The recent adoption of integrated pest management techniques such as single year class management, fallowing, and vaccines by the industry have reduced the use of therapeutants.

Therapeutants

The use of Therapeutants in aquaculture in Maine is exclusively limited to the finfish industry. Unlike other countries, only four therapeutants are legal for aquatic use in the United States. Formalin (Formalin-F; Paracide-F; Parasite-S) and emmamectin benzoate (Slice) are approved to control external parasites and sulfadimeth-oxine and ormetoprim (Romet 30) and oxytetracycline (Terramycin, TM-100) are approved as antibiotics to control bacterial infections. Only Slice and Terramycin are used in Maine and both are administered through feed, and both are prescribed under the supervision of a veterinarian. Monitoring for these therapeutants in sediments to track accumulation has failed to find them at levels of concern. Timely treatment benefits both the health of the reared species and the environment as it results in overall less use of therapeutants. Monitoring, spill containment and cleanup plans for therapeutants and other chemicals and toxic contaminants are part of the new MEPDES permit. As an Investigational New Animal Drug (INAD), Slice™ is undergoing environmental tests by USFDA, DMR, and DEP to determine whether this therapeutant can become an approved drug. Two other compounds (Finquel and clove oil) are approved for use as anesthetics in aquatic veterinary medicine.

Dietary compounds including contaminants such as organochlorines and nutritional additives such as zinc have also been looked at in sediments here in Maine and shown not to be at levels posing undue biological risk.

Findings

1. Two kinds of therapeutants are used in Maine finfish aquaculture. One to treat parasites (Slice™ or emmamectin benzoate) and another to treat infections (Terramycin or oxytetracycline).
2. Therapeutants and pesticides are not known to be used by shellfish aquaculture.
3. Industry-wide, use of chemical therapeutants has decreased over the past 10 years due to vaccines and integrated pest management practices.
4. Oxytetracycline has not been detected in sediment under net pens. Slice™ has been found at low levels. Testing continues to determine whether levels are accumulating and is part of the MEPDES permit.
5. Drugs used in aquaculture are overseen by USFDA, EPA, MDEP and DMR and AVMA.
6. Copper, zinc and PCBs have also been tested in sediments under pens. Metals are below levels of biological concern. PCBs have not been detected.

7. The DEP MEPDES permit has testing requirements that will continue surveillance of various heavy metal contaminants such as zinc, copper, and therapeutants used by aquaculturists.
8. Maine's regulatory agencies need to acknowledge the environmental benefits of rapid response to disease and remove impediments to use of new therapeutants.
9. The TF is satisfied that the current process of oversight is both adequate and appropriate.

Recommendations

- DMR and DEP should continue to monitor the environment for the presence of toxic contaminants and ecological impacts.
- DMR and DEP should continue participation in USFDA environmental studies on SliceTM.
- Maine should be especially careful to avoid impeding professional veterinary practices to prescribe and use medications in a timely manner and explore new drugs while safeguarding surrounding species.

D. Shellfish Impacts

Ecological impacts from shellfish aquaculture have been reported from around the world. Two concerns, removal of phytoplankton and accumulation of solids, have been identified in comments to the Task Force. Other concerns such as the introduction of non-native species and interactions with wildlife are discussed separately.

As filter feeders, shellfish remove particulate matter (phytoplankton, zooplankton, and sediment) and dissolved organic matter from the water column (oligotrophication). Where shellfish are farmed in high numbers, there is the potential to directly compete with local biological communities for food. In Maine, however, shellfish aquaculture is not practiced at these extreme levels where depletion of phytoplankton has been detected.

Questions have been raised about bottom impacts, pseudofeces⁹ and oligotrophication. However these have not been identified as a problem in Maine.

Findings

1. Shellfish aquaculture does not appear to be causing unreasonable adverse impacts in Maine.

Recommendation

- DMR should conduct a “screening study” that emphasizes “worst case” conditions to assess what, if any, impacts shellfish aquaculture is having in Maine.

⁹ Pseudofeces are the non-digestive tract waste products of shellfish (e.g. silt, non-edible algae, etc.). In some areas of the world where shellfish culture is more intensively practiced than here in Maine, they have been found to accumulate in significant amounts.

E. Invasive/Non-Indigenous/Exotic Species

Since aquaculture involves the movement of plants and animals across political and bio-geographic boundaries, the potential for introducing new species, diseases and parasites is a concern. Exotic or non-indigenous species may become invasive. If an introduced species occupies an unfilled ecological niche, lacks predators or diseases, they may grow unchecked to the detriment of indigenous species. Not all introductions become invasive or a nuisance, however. Aquaculture is not thought to have been responsible for the introduction of any present invasive or nuisance species (e.g. green crab, Asian shore crab, dead man fingers, sea squirt, etc.). It is widely acknowledged that a far greater threat is posed by the inadvertent introductions from recreational boating (fouling) and commercial shipping (fouling and ballast water). Several task forces (one here in Maine, one for New England, and another at the national level), Congress, and the Maine Legislature are dealing with the issue of exotic and invasive species on many levels.

Maine's aquaculture lease law has the ability to regulate the species to be cultured. The movement of new species is addressed through Section 6071 of Chapter 24, Importing of certain marine organisms. Under this law,

1. "Nonindigenous species" means an organism belonging to a species that is not native to Maine, that is, that does not now exist naturally in Maine.
2. Permits are required to ... "introduce into coast waters a live marine organism..."
3. Permits are issued if the introduction will ... "not endanger the indigenous marine life or its environment."
4. Public hearings are required for the introduction of new species.
5. DMR may adopt rules to regulate disease and parasites and impose specific conditions on the introduction of a nonindigenous species.
6. Species may be embargoed and condemned by the DMR Commissioner and,
7. The DMR Commissioner shall cooperate with other state and federal agencies.

Maine also has three Marine Fish Health Zones across which permits are required after veterinary approval to manage diseases and parasites.

Where concerns over introductions have emerged, the DMR has evaluated the risk posed by introducing new species. Recently, however, the issue of introducing species indigenous to Maine to areas of the coast where they are not known to occur has arisen. The Maine coast has an especially diverse set of habitats and contains many "isolated" embayments and estuaries. The biological communities there have evolved since glaciation to becoming somewhat unique while at the same time containing many ubiquitous species. It is unlikely that these introductions will become invasive given their history of non-invasive existence in Maine. Survival is determined in large measure by environmental conditions (e.g. temperature, salinity, etc.) and partially explains why many Maine species are not ubiquitous. If environmental conditions have not enabled the species to grow naturally, then there is

less likelihood that the farmed organisms will thrive in the wild. Further, most areas of Maine have already been exposed to larval transport.

Findings

1. In Maine, no significant adverse impacts have occurred as a result of aquaculture.
2. Inadvertent introductions from ballast water, recreational and commercial boats and natural dispersion pose the most serious threat.
3. Some species not indigenous to Maine (e.g. European oyster, northern quahog, rainbow trout, etc.) have been cultured in Maine for decades with no apparent adverse effect on local biological communities.
4. The definition of non-indigenous is relative. The issue of moving a new species into areas within Maine where they are not known to occur warrants investigation.
5. The transfer of organisms from one part of Maine to areas where it does not occur is of limited risk.
6. Movement of organisms within Maine warrants review and analysis to avoid movement of disease, parasites and ensure local compatibility.
7. The present law affords the state with tools to address this issue through the aquaculture lease, fish health zones, and Chapter 24.

Recommendations

- Define “indigenous” as organisms known to occur or to have occurred in an area.
- Include genetically modified organisms (GMOs) as “non-indigenous” or new species.
- DMR should develop a definition for “area” or “waterbody” in an ecological context.
- DMR should change Chapter 24 to include language requiring Departmental review for all introductions of species not currently resident in the proposed growing area.
- DMR should review the list of currently approved species to ensure that undesirable organisms are removed until scientific reviews are complete.
- Management of species movements should be made as requests arise so that the most current information on biology and ecology is employed.
- Maine should discourage the use of species not already established within the Gulf of Maine.

F. Wild Atlantic salmon

The Gulf of Maine “distinct population segment” (DPS) of Atlantic salmon has been identified and listed as federally endangered. Eight Maine rivers are listed as having remnant populations. While it is generally agreed that salmon aquaculture did not cause the decline in wild Atlantic salmon, salmon aquaculture must take measures to minimize exposure of wild salmon to farmed salmon. The primary issues are genetic dilution, diseases and parasites, and intraspecific competition from escaped aquaculture fish.

The primary management tool to wild salmon restoration is limiting exposure to cultured salmon. This is done using a “belt and suspenders” approach; 1) preventing escapement and 2) ensure that all farmed fish are of North American origin if they do escape. If these are successful, then secondary considerations to wild salmon, e.g. disease and intraspecific competition, are neutralized. Separating salmon aquaculture from salmon rivers is practiced in Europe (e.g., Ireland and Scotland) to reduce the probability of escaped salmon from mixing with wild populations. Research is ongoing in Maine and the Maritimes to assess risks here. To date, emphasis in Maine has been to prevent escapement, manage sea lice and disease at low incidence, and identify farmed salmon so they may be removed if caught in the wild.

The effort to restore wild salmon includes participation at state (Atlantic Sea-Run Salmon Commission), federal (US Fish and Wildlife Service, National Marine Fisheries Service) and international (NASCO) levels. Two enforceable tools (DEP’s MEPDES permit and Army Corp Permit) have incorporated the following conditions:

- Prohibition of the intentional release of aquaculture fish;
- Phase out of existing non-NA stock;
- Genetic testing and reporting of all broodstock;
- Prohibition of transgenic salmonids;
- External marking to easily identify Maine aquaculture fish found in rivers;
- Marking by any means to identify fish to company hatchery or origin;
- A report on site-specific marking;
- Employment of a Containment Management System (CMS) with annual audits; and
- Reporting of escaped fish.

Findings

1. Many agencies and institutions are addressing issues related to wild Atlantic salmon and aquaculture.

Recommendations

- DMR must ensure that Maine’s aquaculture regulatory and husbandry practices are compatible with the Recovery Plan for Atlantic Salmon.
- The Governor and the Legislature should request Congressional support for closer collaboration and cooperation with federal services.
- The Governor should insist on full participation of state, federal and industry sectors on the research on marking, tagging and identification.
- Support research into wild smolt emigration routes and pathways of exposure to assess risk from salmon farms.
- The Governor should require equitable treatment of all salmon aquaculturists, public and private, to implement permit conditions. (e.g. genetic testing, marking, fish health, and reporting be part of any permits for public hatcheries rearing Atlantic salmon)

G. Wildlife Interactions

Although interactions between commercial aquaculture and marine wildlife are noted in the literature, these impacts are not well documented in Maine. Issues center on human disturbance, acoustic harassment devices (AHDs), shooting, entanglement, and altering food-gathering behavior. Other than a joint DMR and University of Maine study on the interaction between seals and finfish aquaculture, studies of this type in Maine are rare.

The most common concerns in Maine are related to siting operations, especially finfish, near eagle nests and seabird nesting colonies. Shellfish aquaculture is less of a problem due to its generally smaller size, less human activity, and lower visibility (submerged farms even less so). The DMR has no record, other than anecdotal, of shooting, entanglement, or harassment. Although some farmers have admitted to this in the past, better predator nets and “cleaner” husbandry (less food available) has reduced interactions.

Impacts to wildlife are considered in the leasing process and avoided. When an aquaculture lease is proposed, biologists from the Maine Department of Inland Fish and Wildlife are given the opportunity to comment on the potential impact to wildlife with particular attention paid to the list of Significant Wildlife Habitats. State wildlife biologists have stated that their biggest need is for more science and information to assess whether or not there is a problem in Maine.

Findings

1. Aquaculture is currently not known to be causing significant impacts to wildlife.
2. Proximity to physical human activity, noise, lights, and entangling material such as nets, are the primary factors of concern.
3. Programs, laws and procedures exist intended to address impact to wildlife.
4. Additional research is needed to better understand and assess the interactions between wildlife and aquaculture here in Maine.

Recommendations

- Support research into the impacts on wildlife, esp. nesting birds, and to identify causes of and develop practices to avoid adverse impacts.
- Encourage and support collaborative research between industry, state and federal wildlife agencies.

H. Monitoring

Monitoring environmental impacts of aquaculture in Maine has emphasized finfish due to its greater potential risk, however, in the last few years, shellfish impacts have also been investigated. Until recently the Maine Legislature exempted finfish growers from acquiring a waste discharge permit as long as it could be shown that water quality standards were attained. The Finfish Aquaculture Monitoring Program (FAMP) was a joint program between DEP and DMR developed to ensure that finfish

aquaculture attained the goals of the federal Clean Water Act through the DEP Water Classification Program.

To cover the cost of monitoring equitably, a harvest tax (\$0.01/ pound) was imposed on production to fund the FAMP. This arrangement enabled the state to directly supervise industry-wide monitoring. This was not an enforcement program but provided information to the DEP (the agency responsible for water quality) who then worked with DMR and the industry to correct problems. The program used a tiered approach in that monitoring effort was proportional to environmental risk based on scale of operations and historical performance. The program continually evolved availing itself of new science and was endorsed by USEPA and Army Corps of Engineers.

In 2001, Maine was delegated responsibility for issuing federal wastewater discharge permits. An MEPDES permit was finalized in 2003 that contained monitoring provisions. Although many provisions are identical to those in the FAMP, there are additional requirements and techniques in the new permit. The added value of these new tests has not been assessed but these additional requirements have significantly increased in the cost for monitoring.

Where FAMP can satisfy an aquaculture MEPDES permit it will do so. There is a bill before the Legislature proposing to eliminate the FAMP. Eliminating FAMP would reduce the DMR workload, however, it would also impact both the industry and the concerned public by removing the benefits envisioned by the Legislature when they established the program:

- unified and standardized program provided reliable and consistent data;
- required state regulators to be engaged in monitoring to understand the limitations and context of monitoring;
- advanced our scientific understanding of impacts;
- enabled predictive models to be built;
- enabled state regulators to provide technical assistance to farmers regarding environmental Best Management Practices; and
- annual reports on environmental conditions are produced and made available to the public.

Both agencies, DMR and DEP, can continue as they have in the past administering the FAMP as a joint project to ensure that water quality is protected. Which agency administers FAMP is less relevant.

Findings

1. The FAMP has provided an independent and robust surveillance program for the finfish aquaculture since 1991.
2. The Board of Environmental Protection recently developed the new MEPDES permit that contains more rigorous monitoring.
3. The Aquaculture industry is in a position to contribute some ambient monitoring data, however, there are distinct advantages to continuing a unified state managed monitoring program.

Recommendations

- DMR should continue to implement the FAMP funded by a harvest tax. Explore and update other fee schedules to fund hearings officer and pathologist positions.
- DMR and DEP should coordinate the MEPDES and FAMP monitoring provisions to avoid redundancy and use FAMP data to the maximum extent possible to cover MEPDES requirements.
- Encourage industry to participate in ambient water quality monitoring.
- The Legislature should require the DEP to evaluate the new MEPDES permit monitoring requirements for value and efficacy by 2005 and adjust as necessary.

IX. INFORMATION, RESEARCH AND INDUSTRY PROMOTION

A. Public Information

Issue Summary

There is lack of knowledge, acceptance and support of aquaculture by some members of the general public and users of marine resources. This is, in part, due to little effort on behalf of the state and the industry to provide the public with ready access to information about aquaculture in Maine. Much of the published information about aquaculture relates to the situation in other parts of the world that may not accurately portray the aquaculture sector here in Maine. Consequently, some of the perception of aquaculture here may not be based on relevant information and there is a significant need to clarify some of this information so the public perception is based on factual information. The public has real and significant concerns about how aquaculture is being practiced and managed in Maine and there needs to be more sincere and transparent sharing of information by the industry and the agencies involved to ensure that the debate around the various issues is well informed.

Findings:

1. The Task Force noted that in many cases, the public did not have accurate information on how the leasing process works, criteria used in evaluating leases and aquaculture practices in general.
2. The Task Force also observed that there is public discomfort with DMR's dual role of regulating and developing the aquaculture industry.
3. The Commissioner of DMR is both the decision maker for aquaculture leases and a spokesperson for the industry.

Recommendations:

- DMR should convene several appropriate organizations to develop a public information plan. Primary organizations that should be invited to the discussion include:

- Department of Marine Resources
- Maine Aquaculture Innovation Center (MAIC)
- Maine Aquaculture Association
- Coastal Zone Management Program
- University of Maine Sea Grant Program

Secondary organizations that should also be invited to participate include:

- Finance Authority of Maine (FAME)
- University of Maine School of Marine Sciences
- Island Institute
- Coastal Enterprises Inc. (CEI)
- Marine Educators Association
- Gulf of Maine Research Institute
- Maine Dept. of Education

Maine Dept. of Agriculture, Food and Rural Resources
Cobscook Bay Resource Center
Downeast Institute for Applied Marine Research & Education

Charge the above group to identify areas where public information is needed and develop a plan to address these information needs. The group should consider the following categories of education needs:

- Regulatory: Inform the public about the regulatory structure (state and federal) and how to participate in the leasing process. Inform the public on the progress of specific lease applications and permits (See recommendations in section on leasing, Section VI (A) (3).
- Environmental Concerns: Inform the public about issues such as Endangered Species Act listing of wild Atlantic Salmon, ecological concerns, and husbandry.
- Legislative Actions: Inform the public about upcoming bills, public hearings, and resulting changes to statute or regulation.
- Publicity About Industry: Inform the public about new tenants in incubators, new research facilities, grant awards, small business success stories, innovations, research breakthroughs, etc.
- K-12 Education: Reprint and distribute MAIC high school curriculum, and provide teacher training on the curriculum, increase aquaculture presence in high school math/science activities such as the National Ocean Sciences Bowl, statewide science fair, etc.
- University Education: Encourage the University and Community College System to enhance and more aggressively promote their aquaculture degree programs, and establish links between their programs.

The planning group should identify practitioners to carry out these activities and seek funding to support the implementation of these education initiatives. The Task Force recommends specifically that:

- Printed materials used to inform the public and municipalities on the leasing process should be updated; and
 - Recreational/hobby aquaculture should be encouraged as a way to engage and educate the public about aquaculture.
- The Governor and legislative leaders should encourage the Maine Congressional Delegation to secure funds for aquaculture public information.
- Add a public affairs function to the Department of Marine Resources. Specific duties of this position should include:
- Communication with the public, the industry and the legislature about leasing, regulatory and policy issues regarding aquaculture;
 - Solicitation of public and industry input and feedback on policy ideas under consideration;
 - Distribution of press releases, organization of press conferences as appropriate;

- Convening of focus groups, meetings and forums to bring together diverse interests as needed; and
- Develop regular vehicles for communication (email lists, e-newsletters, etc.) between the department and constituent groups.

B. Research

Issue Summary

Research and Development has played a major role in areas where aquaculture has grown to be a significant economic contributor. Jurisdictions such as Norway, Chile, New Brunswick, British Columbia and Prince Edward Island share several common characteristics that are worth noting. In each case, resources were *focused on a single species* for which there were few unknowns about biological, site and equipment performance. Also in each case, *a significant and continuous investment in public research and development was made*, as a way of supporting the growth of industry. (Gardner Pinfold Economic Study, 2003)

Maine has not had a single species focus on research to support aquaculture. A wide range of research is needed in the areas of genetics, broodstock development, new species development, shellfish and finfish technology, developing new feeds and production technologies.

Greater focus on aquaculture research has begun in Maine with the establishment of a new aquaculture research facility in Franklin in 2001. This facility has the potential to become a nationally significant academic aquaculture research center. As of 2003, \$14m of federal funds have been allocated to this project, with more construction and staffing expected over the next five to ten years. Another initiative in the planning stages at Orono, the Maine Aquaculture Research Institute, would coordinate and focus resources on aquaculture topics of interest to the Maine industry.

Aquaculture is a “targeted industry” of Maine’s Economic Development strategy. The Maine Technology Institute and the Maine Aquaculture Innovation Center have funded a number of companies and research institutions to develop new production methods and technologies for the Maine aquaculture industry.

Through the University system and other research institutions in Maine, Maine has the opportunity to develop a more robust capacity to conduct scientific investigations to help develop improved technologies, better evaluate the ecological compatibility of aquaculture along our coasts, and to inform our decision makers. At present, the research activity in Maine is entrepreneurial and piece-meal and in need of better coordination.

Findings

1. The Task Force noted several suggestions for additional research made through public comments. Most of these suggestions focused on a need to better understand

the impacts of aquaculture on the environment. (See Recommendation #1 below for a list of research themes)

2. There is a need to increase the priority level and funding dedicated for aquaculture at the University level.
3. Maine has limited resources for aquaculture research. It is critical that existing resources are deployed as effectively as possible.
4. There is a need for the research community and industry to have a regular forum for dialogue and review of research priorities.

Recommendations

- The Governor, the Legislature and industry should strongly voice their support and expedite the recently initiated plan for the Maine Institute for Aquaculture at the University of Maine. The proposed Institute would greatly strengthen aquaculture research for Maine and address many of the findings of this Task Force.
- DMR and the University of Maine should convene a group of research organizations and industry representatives for the purposes of setting priorities for aquaculture research, determining which species have the most potential for development and should be the focus of research efforts, and accessing bond funds to support aquaculture research. Specifically, this planning group should:
 - a. Use the 2003 Gardner-Pinfold study as a guide in determining which species have the most potential for economic development in Maine; and
 - b. Consider the following research needs that were identified by the Aquaculture Task Force in their deliberations:
 - Ecological impact studies (nutrient carrying capacity, modeling of nutrient loading, assessment of monitoring needs, predictive nutrient loading based on biomass in the pens, risk assessment associated with PCBs (and other toxins) in farmed fish, Eutrophication studies – proportionate contribution from discharging aquaculture, impact of shellfish aquaculture on primary productivity, predictive capacity for benthic impacts;
 - Gear/Husbandry technology and development (improved anti-escapement gear, improved tagging technologies, alternative feed development to minimize the use of forage fish);
 - Genetics and stock development (breeding for disease resistance and growth); and
 - Socio-economic studies (cost/benefit to coastal communities, market research, value added/niche markets).
- The DMR should convene a formal annual meeting between representatives of research institutions and industry to review aquaculture priorities and foster communication and collaboration between these two groups.
- Ask the University of Maine to add an aquaculture seat on the Agricultural Advisory Council. This will help ensure that there is adequate faculty and focus on aquaculture.

- Encourage the University of Maine's School of Marine Science to fill their shellfish aquaculture position as soon as possible.

C. Industry Development and Product Promotion

Issue Summary

Maine's aquaculture industry has two distinct sectors: finfish (salmon) and shellfish. Maine's finfish sector is a small part of a large, consolidated global industry. Three multi-national firms dominate Maine's salmon industry. Maine's shellfish industry is an owner-operator entrepreneurial industry with enough profit margin to be viable on a small scale. The development needs of these two sectors are very different.

Maine has made a minimal effort to develop aquaculture as an industry sector. State agencies have focused on creating a regulatory structure (leasing, monitoring, etc.) and not on business incentives for the aquaculture industry. There are general business development programs available, but no specific incentives have been developed for the aquaculture industry. Most of the industry development work has been done by the Maine Aquaculture Innovation Center, supplemented by the DMR and Maine Aquaculture Association. Sea Grant provides technical extension services to support aquaculture growers.

The state provides minimal product promotion for Maine aquaculture products. Aquaculture products haven't been featured in Maine Tourism Bureau or Maine Dept. of Agriculture promotional programs.

It should be noted that other jurisdictions have provided a wide variety of support to the development of aquaculture. Typical forms of support are grants, credit and loan programs, tax incentives and tax relief, government marketing programs, government training programs, physical infrastructure such as government hatcheries and government equity positions in aquaculture businesses. In early stages of development, direct support in the form of grants and government-supported basic research is most needed. Once a species is established commercially, greater emphasis is typically placed on R&D and extension services.

Findings

1. In the finfish sector, more could be done to encourage processing and private growout businesses in Maine.
2. In the shellfish sector, there is a need to encourage entrepreneurs and to provide them with tools to help them succeed.
3. As regulator of the aquaculture industry, DMR is not the appropriate agency to lead economic development and promotion activities for the aquaculture industry.
4. There is a need to provide technical expertise to inform the economic development efforts for the aquaculture industry.

Recommendations

- Lead responsibility for development of the aquaculture industry should be moved to the Department of Economic and Community Development (DECD) as part of its business development and science and technology programs.
- Lead responsibility for market promotion of aquaculture should be moved to the Dept. of Agriculture (DAFRR) to become part of their market development and product promotion programs and benefit from USDA financial support.
- Recognizing that DECD staff possesses economic development resources and DAFRR possesses agriculture promotion resources but both DECD and DAFRR lack aquaculture industry expertise, DECD should take the lead in forming an Aquaculture Industry Development Working Group with committed participation from the Maine Aquaculture Innovation Center and DMR. The charge of the Aquaculture Industry Development Working Group would be to advise and provide technical expertise to the DECD on aquaculture development and DAFRR aquaculture promotion, develop aquaculture business incentives, link aquaculture with existing business support programs and services, and find funding or reallocate resources for a grant writer and a business development specialist in aquaculture.
- The legislature should continue to support the Maine Aquaculture Innovation Center and the DMR in their work to provide technical support and develop Maine's aquaculture industry.
- The legislature should continue to support the Maine Technology Institute in its work to provide research and commercialization grants for aquaculture.
- DECD should convene business development meetings between the state and multi-national salmon firms to determine what they need to encourage local entrepreneurs to grow fish for them and what they need to continue fish processing in Maine. Examples of possible incentives:
 - Increase number of acres a single company can lease (so they can support a processing plant in Maine);
 - Find ways to encourage and enable owner-operator finfish businesses; and
 - Explore traditional business support programs such as tax incentives, tax credits, employee training, etc.
- The Department of Agriculture should engage in product promotion activities that will result in Maine aquaculture products being recognized as sustainably produced, superior quality products in the Northeast region. These activities should include:
 - Initiating a study to test the acceptance of a sustainable certification program for Maine finfish and shellfish products; (MAA is already seeking grant funds to do this. Also, Nova Scotia is preparing to study this.)
 - Featuring finfish and shellfish aquaculture in "Get Real, Get Maine" and Maine Bureau of Tourism promotional campaigns;
 - Writing regular press releases about innovation and business success for Maine aquaculture businesses. Focus this effort on Maine media outlets including local weeklies, local television and regional papers;

- Linking to the nutrition education network(s) in Maine and the medical community to educate consumers about the health benefits of consuming seafood; and
 - Promoting and encouraging the Maine Aquaculture Training Institute in their effort to train new shellfish aquaculturists.
- DECD should provide the tools and support needed by aquaculture entrepreneurs to succeed in their businesses. These include:
- Linking aquaculture entrepreneurs to existing small business services and training programs. Where possible, programs should be customized to fit the needs of aquaculture producers, as has been done in customizing the Fastrac business course for farmers;
 - Providing matching funds to entrepreneurs to allow them to attend conferences, visit aquaculture sites in other parts of the world and get training in culture methods. Exploring ways that Sea Grant, the Maine Technology Institute and the Maine International Trade Center could fund this effort;
 - Initiating research trade missions to mussel production areas in Canada and Europe as a way of expediting rope cultured mussel production in Maine. Research trade missions for other species should be considered, as well;
 - Ensuring that affordable access to the water is available on a coast-wide basis to those building aquaculture businesses; (MAA and MAIC are participating in the Working Waterfront Coalition that provides public outreach and policy development on this issue.)
 - Exploring the concept of developing “Lighthouse Zones”, meaning specific tax incentives or tax credits for those investing in aquaculture; and
 - Provide micro-loans or grants to stimulate entry into the business and support start up companies.

X. BAY MANAGEMENT

Issue Summary

In recent years, there has been increasing interest from residents of several of Maine's coastal communities in a "bay management" approach to aquaculture; that is, a proactive approach to facility siting and planning based on an analysis of ecological carrying capacity, competing uses, and community values. This interest has been reflected in legislation introduced during the 1st session of the 121st Legislature, and in individual projects that are underway along Maine's coast by local conservation and stewardship organizations.

The Task Force undertook an examination of the concept of bay management, exploring both how it has been used in other parts of the world, as well as how proponents in Maine envision its application. Many people have referenced the fact that various forms of bay management exist in places like Ireland and New Brunswick. Representatives from both Ireland and New Brunswick appeared before the Task Force to explain how bay management has been approached in their countries.

Staff will add a reference to industry-based bay management for fish health and biosecurity reasons in Maine.

In both the Irish and Canadian models, bay management is essentially cooperative agreements amongst industry members to ensure good communication and good fish health practices. In Ireland, bay management was initiated through a program called "Single Bay Management" under which finfish producers implemented integrated management practices (rather than therapeutant treatments) to control disease and parasites. As examples, they adopted single generation sites, coordinated lice treatments, etc. In some bays, Single Bay Management has been expanded into C.L.A.M.S. – the Coordinated Local Aquaculture Management System. These plans have been extended to include the shellfish sector, and have integrated the management practices of various species and sectors. C.L.A.M.S has ensured information exchange between all sectors, not just one group of growers.

Similarly, in New Brunswick, bay management is being implemented through the Bay of Fundy Site Allocation Policy. Here, the bay management areas are determined through a combination of oceanographic studies, relative currents, water exchange, and ownership of sites. The bay management program has provided a framework to restructure the salmon industry with a focus on fish health and environmental sustainability. It includes the designation of exclusion and controlled growth areas.

In certain areas of the coast, the Task Force heard a call for bay management in Maine. However, it soon became clear that what is being requested here is very different than the models in place elsewhere in the world. Here, the interest in bay management is driven by a desire for increased local input into the decisions regarding all uses of the local waters. There is not a clear agreement regarding how this management framework would

be structured, and what its function would be relative to the existing lease process. Some proponents view bay management as a planning exercise, which at its completion, might provide a resource inventory and show areas where a local community would view aquaculture to be acceptable, based on ecological and/or social considerations. Other proponents view bay management as taking the form of a bay-wide review board. This might be a multi-stakeholder body that would react to individual lease applications by offering local information as to the suitability of the proposed site. Such a body would provide input to DMR relating to areas in which the agency has discretion in permitting aquaculture. These include information on locally important scenic and recreational areas, information on fine scale oceanographic features, and issues related to “social carrying capacity.” Such an approach would allow for fuller assessment of cumulative impacts than current regulation and could be proactive rather than reactive. In some cases, the Board is viewed as advisory to the DMR Commissioner, who would retain decision-making authority, in other cases, the Board is viewed as the ultimate decision-making body.

There are multiple perceptions held by members of the public regarding the current leasing system that are driving the interest in bay management. These perceptions include:

- The state is managing public trust waters inappropriately and exhibits a bias towards meeting state policy goals regarding development of the aquaculture industry;
- Opportunities for local participation in the lease process are not sufficient;
- The lease process is too formal, which further impedes local participation;
- There is an unreasonable amount of uncertainty regarding the extent and type of aquaculture that will be permitted in the future;
- Local concerns do not carry enough weight in the decision regarding whether or not to grant a lease;
- The existing lease process fails to view bays holistically, responding instead to lease requests on an ad hoc basis; and
- The existing lease process is not conducive to systematic data collection that can be used in the consideration of future lease requests.

Several other examples of governance in Maine were considered as potential models for bay management, including the State’s municipal shellfish conservation program, municipal comprehensive planning, lobster zone councils and river corridor commissions; none were seen as adequate models for bay management.

The Task Force explored different versions of bay management and worked through the implications of various structures. Discussion also focused on whether bay management would be confined to aquaculture, or whether it should include all uses of a bay, such as commercial fishing, recreational uses, etc. This is a complex issue; there is a lack of clarity on how bay management would work, and a lack of existing models.

How this Issue was Studied

The Task Force received presentations on bay management from representatives from Ireland, New Brunswick, and Maine, as well reports documenting each of these structures. They explored the biological carrying capacity questions of bay management through discussions with a panel composed of University of Maine oceanographers and biologists, and through shellfish reports developed for the West Coast. A panel of members of the Maine “Bay Management Coalition” also presented information to the Task Force.

Findings

1. Under the current lease system the consideration of local and regional knowledge and issues is limited to the decision criteria and their application to a specific lease site.
2. Several of these issues are being addressed through recently implemented revisions to the lease process (e.g. the community scoping meetings, which were added to the leasing regulations in February 2003). The Task Force has also developed additional recommendations for further modifications to the leasing process (Section V), as well as increased outreach and educational efforts (Section IX) that will go even further to alleviate the above concerns.
3. A well-designed, well-executed approach to bay management could offer benefits that modifications to the existing lease process may not. These include:
 - If local stakeholders had a formalized role in the leasing process beyond the opportunity to testify at public hearings, they would be more inclined to participate;
 - Local stakeholders would be able to provide more detailed ecological and social information than the State can collect;
 - The comprehensive collection of local information would result in an improved decision-making process for future lease requests.
 - Decentralization of the planning process would include a broader representation of local interests;
 - The Department might be better able to consider the bay-wide implications of each lease application; and
 - Bay management could be applied to other use conflicts in state waters.
4. If not properly constructed, bay management could be detrimental to the aquaculture leasing process, and could jeopardize the state’s protection of the public trust. Concerns that the Task Force heard include:
 - If not carefully structured, bay management could be used locally to override larger, statewide public trust issues and/or to exclude aquaculture from an area;
 - The jurisdiction of any multi-stakeholder group will need to be limited to ensure that the legitimate needs and concerns of growers are adequately

represented in a multi-stakeholder group, particularly if no aquaculture exists in an area;

- A new level of review may prolong an already lengthy lease application process;
 - Bay management may exacerbate the situation it was designed to mitigate by adding another layer of review to an already complex process; and
 - The financial costs of staffing and administering one or more bay management efforts could be extensive.
5. Bay management means different things to different people, and the Task Force was unable, given time constraints, to develop a working definition of the term. Ideas about bay management ranged from bay planning (issue identification, inventory, and recommendations) to bay management (providing advice and/or decision-making). The Task Force also debated whether bay management should be limited to just aquaculture. Most Task Force members felt strongly that any bay management effort should apply to all public trust uses. Others were comfortable with the initial efforts focusing on aquaculture. There are many questions that would need to be answered before bay management could be implemented. For example:
- Is bay management an *a priori* planning exercise or reactive to specific lease requests?
 - What is the incentive for communities to participate in bay management? Greater standing in the lease process, the obligation of DMR to take into consideration the information presented in the plan, or some limited decision-making authority?
 - How are the boundaries of the bays to be managed determined - ecologically, or adhering to political (municipal) boundaries?
 - How is membership in the bay management committee/board determined - appointed by DMR, the municipalities, or another body?
 - How will representation on the committee or board be ensured – prescribed seats, or different on a bay-by-bay basis, depending on stakeholder composition?
 - Is the bay management committee/subcommittee providing information only on topics in the existing decision criteria, or is this viewed as an opportunity to influence the decision in ways that are not provided for in the existing criteria?
 - Is there a need for the adoption of the plan by a formal body (town meeting, selectmen, or town council) in order to ensure that the recommendations reflect a broader public policy and not just a small interest group?
6. The Task Force agreed that if bay management is pursued in the future, it should not be mandated, but directed on a voluntary basis in those regions that have an interest.
7. The Task Force agreed that it would be necessary to have statewide standards that would have to be met by any bay management exercise. The Task Force was not afforded the time necessary to develop these standards and meet their statutorily required deadline.

8. The Task agreed that in no case should the development of a bay management plan be used as a reason to institute a moratorium on new lease applications.

Recommendation

- After extensive public input and considerable deliberations the Task Force was divided on the issue of bay management. At least one member felt strongly that local groups should be empowered to develop bay management on a voluntary basis, according to guidelines established by the State. At least one member felt strongly that it is premature to allow bay management to proceed and that it might well create more problems than it solves. The majority of the Task Force found themselves somewhere in the middle and were very optimistic that the recent and proposed changes to the leasing process and site criteria will go a long way to address the issues raised by proponents of bay management. As a result the recommendation of the Task Force is to not proceed with implementing bay management specifically for aquaculture at this time.
- The Legislature, the Land and Water Resources Council, or the Commissioner of DMR, should convene a group to study specifically bay management. That group should utilize the values and information collected, discussed, and debated by the Task Force. There are two topics the group should investigate: 1) how best to define bay management, and 2) whether this concept can meet the needs of Maine people.

XI. RECOMMENDATION SUMMARY

APPENDIX A: PROPOSED LANGUAGE FOR STATUTORY AND REGULATORY CHANGES

A.1.

2.7 Pre-Application Requirements for Standard Leases

Prior to filing an application for a lease with the department, an applicant shall attend a pre-application meeting to discuss the proposed application with the harbormaster and/or a municipal officer or other designee of the municipality in which the proposed lease is located and DMR staff. The pre-application meeting will be held in the municipality in which the proposed lease is located. The purpose of the meeting is for the applicant to introduce the proposal to the municipality and the Department and for the applicant and the Department to gain local knowledge from the municipal officials. In addition the pre-application meeting will specifically define the environmental baseline or characterization requirements and other informational needs, including approximate location of the lease site, that the Department determines are necessary to adequately present the proposed lease for review.

At the request of the municipality or the Department, the applicant shall hold a pre-application scoping session. The pre-application scoping session will be held in the municipality in which the proposed lease is located. The purpose of a pre-application scoping session shall be to:

- familiarize the general public with the proposal
- allow the public an opportunity to provide the applicant with additional local information prior to development of an application
- allow the public an opportunity to ask questions of the applicant and the Department.
- and to provide the Department with information that can be used during the Department site review.

The applicant is required to attend a pre-application scoping session when one is held.

The Department shall provide notice of the scoping session to riparian landowners within 1,000 feet of the proposed lease, and to officials of the municipality or municipalities in which the proposed lease would be located, or the proposed lease abuts. All other interested individuals or parties may request to be placed on the Department's service list for notification of these meetings or other proceedings relating to the processing of aquaculture lease applications.

The Department shall issue a press release to the print media regarding the public scoping session and shall also publish a notice in papers of general circulation in the area of the proposed lease.

2.15 Notice of Lease Application and Hearing

1. Notice of Completed Application

At the time that an application is determined to be complete in accordance with Chapter 2.10(4), the Department shall forward a copy of the completed application to the known riparian owners within 1,000 feet of the proposed lease and to the officials of the municipality or municipalities, including the harbormaster if applicable, in which the proposed lease would be located, or the proposed lease abuts, as listed on the application.

~~1. Public Scoping Session~~

~~The Department shall determine whether or not to conduct an informal public scoping session on the aquaculture lease application. Any public scoping session would be held in the municipality in which the proposed lease is located and be scheduled prior to the Department's site work. The purpose of a public scoping session shall be to familiarize the general public with the content of the application, to allow the public an opportunity to ask questions of the applicant and the Department, and to provide the Department with information that can be used during field work or agency review of an application.~~

~~The applicant is required to attend a public scoping session on the application when one is held.~~

~~The Department shall provide notice of the scoping session to riparian landowners within 1,000' of the proposed lease as indicated in the application, and to officials of the municipality or municipalities in which the proposed lease would be located, or the proposed lease abuts. All other interested individuals or parties may request to be placed on the Department's service list for notification of these meetings or other proceedings relating to the processing of aquaculture lease applications.~~

~~The Department will issue a press release to the print media regarding the public scoping session and shall also publish a notice in papers of general circulation in the area of the proposed lease.~~

2.37 Decision

2. Conditions

The Commissioner may establish conditions that govern the use of the leased area and limitations on the aquaculture activities. These conditions shall encourage the greatest multiple, compatible uses of the leased area, but shall also address the ability of the lease site and surrounding area to support ecologically significant flora and fauna and preserve exclusive rights of the lessee to the extent necessary to carry out the lease purpose. A harbormaster and/or a municipal officer or other designee of the municipality may recommend that the Commissioner establish conditions on a proposed lease in writing to the department during the comment period. The department shall consider any conditions recommended by the

municipality, and the department shall provide a written explanation to the municipality at the time a draft decision is written if the condition is not imposed on a proposed lease.

The Commissioner may grant the lease on a conditional basis until the lessee has acquired all the necessary federal, state and local permits. A lease may not be finally approved unless the Commissioner has received certification from the Department of Environmental Protection (DEP) that the project will not violate the standards ascribed to the receiving waters classification, 38 M.R.S.A. §465-B and DEP has issued any required National Pollution Discharge Elimination System Permit governing the discharge of pollutants pursuant to section 402 of the Clean Water Act and 38 M.R.S.A. §413. The Commissioner may require environmental monitoring of a lease site (see Chapter 2.37(2)) and may establish any reasonable requirements to mitigate interference, including but not limited to restrictions on:

- A. specific stocking limits, feeding requirements, husbandry techniques and harvesting methods;
- B. the size and shape of gear, nets, or enclosures;
- C. the deployment and placement of gear; and
- D. the timing of various project operations.

A.2.

§ 6673 Municipal Leasing of Flats

A municipality, which has established a shellfish conservation program as provided under section 6671, may lease areas in the intertidal zone to the extreme low water mark, within the municipality for the purpose of shellfish aquaculture. A municipality may grant a lease to any person.

1. **Application.** ~~A lease application written on a form supplied by the commissioner may be approved by the municipal officers if they find that it~~ The municipality shall review an application for a municipal lease on a form supplied by the municipality. The municipality shall publish a summary of the application in a newspaper of general circulation in the area of the proposed lease. A person may provide comments to the municipality on the proposed municipal lease within 30 days of publication of the lease summary.
2. **Decision.** A lease may be approved by the municipal officers provided that:
 - A. The lease conforms to the shellfish program;

- B. The lease will not cause the total area under the lease to exceed 1/4 of all the municipal intertidal zone that is open to the taking of shellfish;
 - C. Granting the lease is in the best interests of the municipality;
 - D. The lease will not unreasonably interfere with ingress and egress of riparian landowners within 1,000 feet of the lease;
 - E. The lease will not unreasonably interfere with navigation;
 - F. The lease will not unreasonably interfere with fishing or other uses of the area
 - G. The lease will not unreasonably interfere with significant wildlife habitat and marine habitat or with the ability of the lease site and surrounding marine and upland areas to support existing ecologically significant flora and fauna;
 - H. The applicant had demonstrated that there is an available source of organisms to be cultured for the lease site; and
 - I. The lease does not unreasonably interfere with public use or enjoyment within 1,000 feet of municipally owned, state-owned or federally owned beaches and parks or municipally owned, state-owned or federally owned docking facilities.
 - J. Municipal authority to grant a lease under this statute does not limit in any way the authority of the DMR to issue leases in the intertidal zone in accordance with 6072, 6072-A, and 6072-B.
3. ~~**Department procedure for review and approval.** The commissioner shall use the same procedure and the same grounds for approval as required for aquaculture leases under § 6072, except:~~

Municipal Leases. On approval, the lease must be forwarded to the DMR commissioner. The municipality may charge a lease rental fee not to exceed \$50 per acre. The municipality may establish the conditions and limits on the lease. Leases may be granted for a period of up to ten years and shall be renewable upon application by the leaseholder. Renewals shall be granted provided the lease continues to meet the criteria of paragraph 2 of this section. The terms and conditions of a municipal lease shall be monitored and enforced by the municipality.

A. 3

§6072 sub-§7-A. Decision.

7-A Decision. The Commissioner may grant the lease if the proposed project meets the following conditions as defined by rule. In evaluating the proposed lease, the Commissioner shall take into consideration the number and density of aquaculture leases in an area.

- A. Will not interfere with the ingress and egress of riparian owners;
- B. Will not unreasonably interfere with navigation;
- C. Will not unreasonably interfere with fishing or other uses of the area ~~taking into consideration the number and density of aquaculture leases in and area~~. For the purposes of this paragraph, “fishing” includes public access to a redeemable shellfish resource, as defined by the department, for the purpose of harvesting, provided that the resource is commercially significant and subject to a pollution abatement plan that predates the lease application, that includes verifiable activities in the process of implementation and that is reasonably expected to result in the opening of the area to the taking of shellfish within 3 years;
- D. Will not unreasonably interfere with significant wildlife habitat and marine habitat or with the ability of the lease site and surrounding marine and upland areas to support existing ecologically significant flora and fauna;
- E. The applicant has demonstrated that there is an available source of organisms to be cultured for the lease site;
- F. The lease does not unreasonably interfere with public use or enjoyment within 1,000 feet of municipally owned, state-owned or federally owned beaches and parks or municipally owned, state-owned or federally owned docking facilities;
- G. Will not result in unreasonable impact from noise or light at the boundaries of the lease site. For purposes of this paragraph, an applicant shall demonstrate that all reasonable measures will be taken to mitigate noise and light impacts from the lease activities; and
- H. Upon the implementation of rules, the lease must be in compliance with visual impact criteria adopted by the commissioner relating to color, height, shape and mass.

The commissioner shall adopt rules to ~~quantify permissible impact under paragraph G~~ and to establish visual impact criteria under paragraph H, which are major substantive rules as defined in Title 5, chapter 375, subchapter 2-A.

A. 4

Proposed Regulations on Noise and Light

Lighting

Applicability. These rules apply to all exterior lighting used on buildings, equipment, and vessels at all aquaculture facilities, with the exception of lighting for navigation, emergencies, and construction of a temporary nature.

Exterior lighting. All exterior lighting shall be mounted in full cutoff fixtures. A full cutoff fixture is one that projects no more than 2.5% of light above the horizontal plane of the luminaire's lowest part.

All exterior lighting shall be designed, located, installed, and directed in such a manner as to illuminate only the target area and to prevent glare.

Spotlights are prohibited.

The maximum wattage of all exterior lighting shall be 250 watts.

Husbandry lighting. If used, all husbandry lighting shall be submersible and operated at all times below the water line.

Control of noise

Applicability. These rules apply to the routine operation of all aquaculture facilities, including harvesting, feeding, and tending equipment at leases authorized by the Department of Marine Resources, with the following exemptions:

- Watercraft, harvest or transport barges, and maintenance equipment while underway;
- The unamplified human voice and other sounds of natural origin;
- Bells, whistles, or other navigational aids;
- Emergency maintenance and repair of aquaculture equipment;
- Warning signals and alarms; and
- Events not reasonably within the control of the leaseholder.

Mitigation:

All motorized equipment used at an aquaculture operation shall be designed or mitigated to reduce the broadband sound level produced to the maximum extent practical. Practical mitigation means that portable gasoline powered equipment shall have mufflers or be operated within a structure.

Centralized feeding barges, or feeding distribution systems, shall be designed or mitigated to reduce noise by the installation most effective commercially available

baffles at air intakes and outlets, mounting of all relevant equipment to minimize vibration between it and the hull, and the most effective commercially available soundproofing insulation.

All fixed noise sources shall be directed away from any residences or areas of routine use on adjacent land.

A. 5

Proposed Visual Impact Criteria

Applicability. This rule applies to all equipment, buildings, and watercraft used at an aquaculture facility, excluding watercraft not permanently moored at a lease location such as harvest or feed delivery vessels. Other equipment or vessels not moored within the boundaries of a lease, but routinely used or owned by an aquaculturalist are subject to these requirements. The Department reserves the right to review what equipment, buildings, or watercraft at a particular lease are subject to these requirements.

Building profiles. The size, height, and mass of buildings and equipment used at aquaculture facilities shall be considered so as to minimize the visual impact as viewed from the water.

Height limitations. All buildings, vessels, barges, and structures shall be no more than 20 feet and one story in height from the water line. Height shall be measured from waterline to the top of the roof or highest fixed part of the structure or vessel. This height limit excludes antennae, cranes, and other appurtenant structures.

Roof & siding materials. Roofing and siding materials shall not be reflective or glossy in appearance or composition.

Color. Equipment and structures shall be painted, or be of, such a color that does not contrast with the surrounding area. Acceptable hues are grays, blacks, browns, blues, and greens that have a sufficiently low value, or darkness, so as to blend in with the surrounding area. Colors shall be flat in appearance.

The color of equipment, such as buoys, shall not compromise safe navigation or conflict with US Coast Guard Aids to Private Navigation standards.

APPENDIX B: RESOLVE, TO ESTABLISH A TASK FORCE ON THE PLANNING AND DEVELOPMENT OF MARINE AQUACULTURE IN MAINE

CHAPTER 40

H.P. 1112 - L.D. 1519

Resolve, To Establish a Task Force on the Planning and Development of Marine Aquaculture in Maine

Emergency preamble. Whereas, Acts and resolves of the Legislature do not become effective until 90 days after adjournment unless enacted as emergencies; and

Whereas, marine aquaculture is controversial and of great public interest. There is controversy surrounding its impact on the environment, existing wild fisheries, recreation, tourism and conserved land; and

Whereas, marine aquaculture is an important element of the State's marine economy and is a legitimate use of state water; and

Whereas, the process by which state water is leased for the conduct of marine aquaculture is affected by this controversy, which is leading to lengthy administrative procedures, litigation and acrimony; and

Whereas, there is an immediate need for a distinguished group of citizens to deliberate upon state policy for aquaculture leasing in order to develop a broader consensus on the place of aquaculture among other sectors of the marine economy; and

Whereas, in the judgment of the Legislature, these facts create an emergency within the meaning of the Constitution of Maine and require the following legislation as immediately necessary for the preservation of the public peace, health and safety; now, therefore, be it

Sec. 1. Task force established. Resolved: That the Task Force on the Planning and Development of Marine Aquaculture in Maine, referred to in this resolve as "the task force," is established; and be it further

Sec. 2. Task force membership. Resolved: That the task force includes 11 members of the public with expertise in marine resources, fisheries, economic development, business, planning and natural resource conservation to be appointed by the Governor; and be it further

Sec. 3. Chair. Resolved: That the task force shall elect a chair from among its members; and be it further

Sec. 4. Appointments; convening of task force. Resolved: That all appointments must be made no later than 30 days following the effective date of this resolve. Within 15 days after appointment of all members, the Chair of the Legislative Council shall call and convene the first meeting of the task force; and be it further

Sec. 5. Staff assistance; technical assistance. Resolved: That the Department of Marine Resources, with cooperation from the Maine Coastal Program of the Executive

Department, State Planning Office, shall provide staff services to the task force. The task force or the department may also seek or contract for technical assistance from any other agency, institution, individual or group that it determines appropriate to support the work of the task force; and be it further

Sec. 6. Issues to be considered. Resolved: That the task force shall, at a minimum, consider the following issues in developing its recommendations on how to balance the range of potential uses of state waters and plan for the growth of marine aquaculture while considering all applicable scientific data and all reasonable constraints and opportunities:

1. Any bay management or aquaculture development strategies presently being developed in this State and in other national and international jurisdictions that allocate or plan for amounts of aquaculture within geographically defined areas. An examination of these examples must include an investigation of the type of information and technical and financial resources needed to implement such a plan in this State;
2. The present size and characteristics of the industry, as well as the short-term, 2-year, and long-term, 10-year, projections of industry growth, based on market demand and capital investment;
3. An assessment of the impacts aquaculture has on tourism, recreation, conserved lands and surrounding fisheries and the ecological health of any bay where aquaculture is located;
4. An assessment of how the external impact of aquaculture farms can best be mitigated in an equitable and effective fashion;
5. An assessment of present decision-making criteria for granting leases;
6. An assessment of the role of municipal government in the leasing application and approval process;
7. An assessment of the economic impacts aquaculture has on the State; and
8. A review and assessment of all state and federal law relating to submerged property and riparian rights and whether such law is adequate to address current issues relating to the use of Maine's coastal waters; and be it further

Sec. 7. Public meetings. Resolved: That, in examining these issues, the task force shall meet to the extent necessary to fulfill its duties, as well as hold at least 4 public meetings held in different regions of the coast expressly for the purpose of receiving public comment and testimony on its work; and be it further

Sec. 8. Stakeholder Advisory Panel established. Resolved: That the Stakeholder Advisory Panel, referred to in this resolve as "the advisory panel," is established to provide information to the task force at the solicitation of the task force and to review and comment upon the draft report of the task force as provided in this resolve. The task force shall periodically consult with the advisory panel regarding issues identified in this resolve. The advisory panel consists of 11 members, appointed within 30 days following the effective date of this resolve, as follows:

1. Two members of the finfish aquaculture industry, with one member representing a large finfish company and one member representing a small finfish company, appointed by the Speaker of the House of Representatives;
2. Two members of the shellfish aquaculture industry, with one member representing a small shellfish company and one member representing a large shellfish company, appointed by the President of the Senate;
3. One member representing the fishing industry, appointed by the Speaker of the House of Representatives;
4. One member from a coastal municipality who is a municipal official, appointed by the President of the Senate;
5. One member who is of the commercial recreational industry, such as a boat or schooner captain, appointed by the Speaker of the House of Representatives;
6. One member representing a marine industry, such as boat builders or marinas, appointed by the President of the Senate;
7. One member representing the land conservation field, appointed by the Speaker of the House of Representatives;
8. One member representing the environmental field, appointed by the President of the Senate; and
9. One member representing the tourism industry, appointed by the Speaker of the House of Representatives; and be it further

Sec. 9. Report. Resolved: That the task force shall submit a draft report that includes its draft findings and recommendations to the advisory panel no later than December 31, 2003. The advisory panel must review the draft report of the task force and submit its recommendations on the draft report to the task force no later than January 15, 2004. The task force must meet to review the recommendations of the advisory panel and make its final report to the Joint Standing Committee on Marine Resources and the Legislative Council no later than January 31, 2004. If the task force chooses not to include one or more of the recommendations of the advisory panel in its final report, the task force must include in its final report an explanation of the reason why it chose not to adopt that recommendation. The task force may submit legislation to the Second Regular Session of the 121st Legislature, not later than January 31, 2004, to implement the recommendations in its final report. If the task force requires an extension of time to complete its report, it may apply to the Legislative Council, which may grant the extension; and be it further

Sec. 10. Compensation. Resolved: That the members of the task force and the advisory panel, unless otherwise compensated by their employers or other entities that they represent, are entitled to receive reimbursement of necessary expenses for their attendance at authorized meetings of the task force or the advisory panel. The Commissioner of Marine Resources shall use funds from the department's existing resources for costs incurred in carrying out the purposes of this resolve.

Emergency clause. In view of the emergency cited in the preamble, this resolve takes effect when approved.

Effective May 21, 2003.

APPENDIX C: TASK FORCE PROCESS

(Provided by staff, not yet reviewed by task force)

Structure of the Task Force, the Stakeholder Advisory Group and Appointments

The makeup of the Task Force (TF), the Stakeholder Advisory Panel (SAP) and a description of how the appointments to the Task Force and SAP were made is described in Appendix B, *Resolve to Establish a Task Force on the Planning and Development of Marine Aquaculture in Maine*.

Task Force Members

- ❖ Paul Anderson, Director Maine Sea-Grant Program, Chair of the Task Force
- ❖ Josie Quintrell, Director of Policy & Planning, Gulf of Maine Ocean Observing System, Vice Chair of the Task Force
- ❖ Brian Beal, Professor, University of Maine, Machias
- ❖ Jim Dow, Executive Director, Blue Hill Heritage Trust
- ❖ Des Fitzgerald, Businessman, Camden, Maine
- ❖ Paul Frinsko, Attorney, Member Atlantic Salmon Commission
- ❖ Anne Hayden, Marine Resources Consultant
- ❖ Will Hopkins, Director, Cobscook Bay Resource Center
- ❖ Don Perkins, Director, Gulf of Maine Research Institute
- ❖ Van Perry, formerly Finance Authority of Maine, currently, North East Bank
- ❖ Jim Salisbury, Retired, US State Department Fisheries Attache'

Stakeholder Advisory Panel Members

- ❖ Rob Bauer, Maine's Best Seafood, Blue Hill
Shellfish company representative (large company)
- ❖ Sebastian Belle, Maine Aquaculture Association, Hallowell
Finfish aquaculture industry representative (large company)
- ❖ Roger Fleming, Esq., Conservation Law Foundation, Rockland
Environmental field representative
- ❖ Chris Hamilton, Maine Coast Heritage Trust, Topsham -- replaced by Rich Knox
Land conservation field representative
- ❖ Eric Horne, Chance Along Farms, Freeport
Shellfish aquaculture representative (small company)
- ❖ Patrick Keliher, Coastal Conservation Association, Yarmouth
Commercial recreation industry representative
- ❖ Carolyn Manson, Maine Tourism Association, Hallowell
Tourism industry representative
- ❖ David Turner, Engelhard Corp., Perry
Fishing industry representative
- ❖ Tom Morris, Morris Yachts, Bass Harbor
Marine industry representative
- ❖ Dave Schmanska, Harbormaster, Town of St. George
Coastal municipality representative
- ❖ Erick Swanson, Trumpet Island Salmon Farm, Mount Desert

Finfish aquaculture industry representative (small company)

Facilitation Services

Prior to the appointment of the Task Force, a decision was made by Department of Marine Resources and State Planning Office (SPO) staff to procure the services of a neutral, professional facilitator to a) design a workable process for the Task Force; b) to design an approach for interaction of the TF and Stakeholder Advisory Panel; and c) to guide the TF through completion of its work by the prescribed deadline. A limited request for proposals was sent out to facilitation/mediation firms by SPO. Four responses were received and scored by a staff team using established criteria and three firms were interviewed by the team. SPO contracted with RESOLVE Inc. based on the content of the proposal received, results of the interview and the agreed upon cost for completion of the work. RESOLVE's senior mediator, Bruce Stedman was assigned to the project in July, 2003 and provided facilitation services during the duration of the TF's process.

Preparation Before Convening the Task Force

During July and August 2003, the facilitator conducted convening interviews with the Task Force and Stakeholder Advisory Panel members. The purpose was to learn more about their perspectives on the issues facing the Task Force, and to elicit their input and suggestions for the elements needed to conduct an impartial and balanced assessment of marine aquaculture planning and development in Maine. The convening process is also intended to enhance the proposed process for developing consensus recommendations and to fully understand the Task Force members' expectations.

The convening questions were communicated to participants in advance of scheduled interviews, which were conducted by telephone and lasted between 45 and 90 minutes each. All Task Force and most SAP members were interviewed. The draft summary of the Task Force interviews was made available to all participants. SAP member interview information was used by the facilitator to prepare for working with the SAP and the Task Force.

The convening questions and interviews provided an opportunity, at the onset of the process, for the Task Force members to begin gathering information, considering the varying perspectives on issues, testing their assumptions regarding the anticipated barriers or obstacles, and begin developing ideas for addressing the identified issues and concerns.

Task Force Leadership

A chair and vice chair were chosen by the TF from its membership through a nomination process. Paul Anderson agreed to serve as Chair and Josie Quintrell agreed to serve as vice-chair. The Chair and/or the Vice Chair served as liaison between the TF and the staff between meetings, participated in weekly conference calls with the staff and

facilitator and worked with the facilitator between meetings to finalize agendas. Additionally, the chair represented the TF at the Blaine House Conference on Natural-Resource Based Industries and presented the results of the TF's work to the Governor in January. The Chair or Vice Chair convened all meetings of the TF, worked with the facilitator to keep meetings on track, worked towards resolution of issues, proposed assignments for staff and other members of the TF, made requests to the SAP and on occasion, represented the TF in interviews with the press.

Meetings of the Task Force

Meetings of the Task Force were held on:

- August 7 and 8, 2003 Eastport, ME
- September 4 and 5, 2003, Walpole, ME
- September 25 and 26, 2003 Blue Hill, ME
- October 16, 2003, Rockland ME
- November 6, 2003 Brunswick, ME
- November 20, 2003, Eastport, ME
- December 4 and 5, 2003, West Bath, ME
- December 18, 2003, Belfast, ME
- December 29 and 30 conference calls
- January 22, 2004, Augusta ME

The content of all meetings was planned by the staff, with input from the Task Force Chair (and on occasion, Vice Chair) and the facilitator. Meeting locations were chosen to provide for geographic diversity and to allow the TF to get a first hand look at the aquaculture industry and local/regional issues through field trips. Each TF meeting had one or more themes chosen from the Legislative Resolve. White papers on meeting topics were provided to the TF in advance of each meeting by staff, stakeholders and experts. The first six meetings of the Task Force constituted the learning and deliberation phase of the process, where the TF heard various panels and presentations and began to isolate those issues of most concern to them. The first three of these meetings included field trips in Cobscook Bay, the Damariscotta River and Blue Hill Bay, respectively. The last three meetings of the Task Force and conference calls in December were devoted to the development and deliberation of findings and recommendations. Meeting notes were recorded by DMR and SPO staff at each meeting of the Task Force and transcribed into a draft meeting summary. After review and approval by the Task Force, all meeting summaries were posted to the TF website. Meeting agendas, supporting materials and meeting summaries are available at

www.state.me.us/dmr/aquaculture/aqtfmeeting.htm

Public Meetings

The Legislative Resolve charged the Task Force with holding four public meetings. Public meetings were held in the following locations on the following dates.

- September 25, 2003 Blue Hill Town Hall, Blue Hill, ME

- October 16, 2003 Trade Winds Motor Inn, Rockland, ME
- November 6, 2003, Travelodge Atrium, Brunswick, ME
- November 19, 2003 Washington County Community College, Eastport, ME

Each public meeting was advertised in a newspaper of general circulation prior to the meeting. A sample public meeting notice is included in Appendix G.

At each public meeting, members of the public signed up to speak and were afforded 6 minutes each in the sign-up order. The chair and facilitator described the process at the beginning of each meeting, and large wall posters identified the process and topics for late arrivals. The facilitator notified each speaker when their time had expired; speakers with additional comments were afforded one (or more) additional speaking time (s) at the end of the list. When provided, the Task Force received written versions of speakers' comments and additional detailed materials. During each speaker's comments, Task Force members took individual notes and they could ask questions of the speakers; DMR staff members also took notes and developed a summary of comments.

The complete record of testimony provided to the Task Force by members of the public is available at www.state.me.us/dmr/aquaculture/aqtfmeeting.htm under meeting summaries. Staff also provided the TF with a summary, organized by topic, of the public meeting comments. Electronic mail was also used by members of the public to provide comments to the TF. All comments sent by e-mail to the TF from members of the public are available at www.state.me.us/dmr/aquaculture/aqtaskforce/submissions/submissionspublic.htm, categorized by topic area.

How Task Force Requested and Received Advice from the Stakeholder Advisory Panel

Task Force and SAP Interaction During Task Force Meetings:

- Meeting Attendance. Task Force asked that SAP members attend as many of the Task Force meetings as possible to represent their constituencies and be available when the Task Force members had questions involving the different areas of expertise.
- Questions for Expert Panelists. During the meetings, the facilitator took questions from the SAP members directed toward expert presenters. As experts themselves, the SAP members presented questions that needed to be asked (the answers to which the Task Force members needed to hear).
- Due to the short of amount of time available to the Task Force, the facilitator worked with the SAP during meetings to take questions directed to the experts, with only limited comments on the presentations, questions directed to the Task Force, or debate on the issues. Opportunities for these other modes of advice were available at other times.)
- Open Time. 15 minutes at end of each half day was provided during which SAP members brought issues to the attention of the Task Force.

- Expert Presentations. The Task Force asked each SAP member that wished to do so, make at least one expert presentation as part of the learning phase of the process, either as a panelist or to assist with guiding and providing expertise during field trips. These were also opportunities for the SAP members to present their constituency's views.

TF and SAP Interaction Between Task Force Meetings

- Solicited Written In-Put. The Task Force requested issue papers (including brief descriptions of the problem and recommendations), comments, or critiques on various topics (especially pertaining to their constituency's views) to assist the consideration of topics.
- Unsolicited Written In-Put. The Task Force requested that SAP members and sub-groups proactively develop and submit issue papers, comments, or critiques on topics, (especially pertaining to their constituency's views).
- Written Constituency In-put. SAP members forwarded the questions, views, concerns, and ideas from their constituencies in writing and through presentations to the Task Force.
- Where possible, materials submitted to the Task Force from the SAP have been made available for viewing at www.state.me.us/dmr/aquaculture/aqtaskforce/submissions/submissions.htm

TF and SAP Interaction At the End of the Process

- Critique of Draft Recommendations. As described in the Legislative Resolve, the SAP was charged with reviewing and critiquing the Task Force's draft recommendations. Bruce Stedman of RESOLVE Inc. provided facilitation services to the SAP at their January 8, 2004 SAP meeting. The SAP submitted their written critique to the TF on _____.
- The Task Force was charged in the Resolve with considering the SAP's comments and providing a written response back to the SAP. The Task Force reviewed the SAP's comments on _____ and responded back to the SAP on _____.

Subcommittees

Throughout the TF process, individual TF members volunteered to explore topics on their own or in conjunction with one or two other TF members. In November, 2003 this arrangement was formalized through the creation of five subcommittees of the TF. The work of subcommittees was conducted both in person and via conference calls. The membership of the subcommittees, the lead TF member and the staff assigned to the subcommittees were as follows:

DRAFT FOR REVIEW BY STAKEHOLDER ADVISORY PANEL

<i>Subcommittee</i>	<i>TF Members</i>	<i>Lead Staff</i>	<i>Support Staff</i>
Leasing Process	Paul Frinsko (lead) Jim Salisbury Don Perkins	Mary Costigan	David Etnier
Bay Management	Josie Quintrell (lead) Anne Hayden Des Fitzgerald Paul Anderson	David Etnier	Deirdre Gilbert Kathleen Leyden
Conserved Lands & Special Areas	Jim Dow (lead) Anne Hayden Van Perry	Kathleen Leyden	Deirdre Gilbert
Environmental/Ecological Impacts	Brian Beal (lead) Will Hopkins Paul Anderson	John Sowles	
Education, Research & Industry Promotion	Van Perry (lead) Paul Anderson	Sue Inches (industry promotion) Kathleen Leyden (education)	

Decisionmaking: Consensus, Voting

The Task Force worked by consensus as much as possible on matters of policy, process, findings, and recommendations. On rare occasions, the Task Force conducted straw votes to determine whether and how the panel could reach consensus on an issue. Logistics and administrative work were delegated to the chair, vice chair, facilitator, and/or staff as appropriate.

Task Force Report

Each subcommittee of the TF submitted findings and recommendations for review by the entire Task Force. Some of the work was developed for the subcommittees with the help of staff, other subcommittees worked independently. In situations where there was no subcommittee (i.e. tourism, commercial fishing) staff captured TF deliberations and drafted findings and recommendations. In all cases, the written materials were reviewed and edited by the entire Task Force and formally approved for inclusion in the draft report. Review of draft findings and recommendations was begun at the TF's November 2003 meeting in Eastport, and continued at the TF's two December 2003 meetings in West Bath and Belfast. The Task Force held two conference calls on December 29th and December 30 to review the draft report. An editing group consisting of a subgroup of the TF also convened on December 31st.

APPENDIX D: TASK FORCE MEETING MATERIALS

[Click here to see Appendix D](#)

APPENDIX E: ENFORCEMENT PROTOCOL

Please check type of lease below:

- ☐ Finfish
☐ Bottom Shellfish
☐ Suspended Shellfish

D R A F T AQUACULTURE CHECKOFF LIST

Each aquaculture lease site within an officer's patrol area must be visited at least ONCE a year. The visit must be recorded on the below report and then forwarded along to Section Supervisor.

Officer Name	
Date of Inspection	
Name of Lease Holder	
Location of Lease	
Is Lease Properly Marked? (Circle one)	Yes or No
Is Lease Properly Licensed by DMR? (Circle one)	Yes or No
List Licenses Held	
Cultivation Technique	
Species Cultivated	

Conditions of Lease Site ☐ Met ☐ Did not meet
Explain overall condition of lease site (i.e., trash, loose gear, etc.):

Gear within Lease Boundaries ☐ Yes ☐ No
If no, explain:

Have you received complaints regarding this lease site? If so, please explain:

Comments:

APPENDIX F: INDUSTRY OVERVIEW

Maine's Aquaculture Industry

The Maine aquaculture industry consists of three segments: hatcheries, growout operations and processing. Of these three areas, growout operations are by far the largest in revenues and employment. Three species dominate production: Atlantic salmon, blue mussel and American oyster. Total value of production is estimated at \$57 million, with salmon accounting for 95% of this. This represents a decline from the late 1990s, when higher salmon production and prices resulted in a \$75-80 million industry.

Maine's aquaculture industry has two distinct sectors: finfish (salmon) and shellfish. Maine's finfish sector is a small part of a much larger, highly consolidated global industry. Maine salmon farms supply less than 5% of the US market, and represent less than 1% of salmon produced worldwide. Currently, processing facilities, feed and equipment are supplied from outside of Maine and Maine's industry could be characterized as a grow-out operation that supports Canadian and Norwegian firms.

Maine's salmon aquaculture industry has undergone many changes since it began twenty years ago. It started as an entrepreneurial opportunity, with wholesale prices above \$5.00/lb and margins strong enough to encourage small operators to enter the business. Over a period of fifteen years, farm raised salmon moved from a high priced niche product to a low priced global commodity. Prices dropped steadily, reaching lows of less than \$2.00/lb in 2002. During this period, most growout sites in Maine were purchased by multinational firms and significant investments were made in automation. In 2001, ISA (Infectious Salmon Anemia) disease prevented importation of Canadian fish to Maine processing plants and decreased Maine's harvest. A severe winter in 2002 also reduced Maine's salmon harvest. These factors resulted in the closure of two processing facilities in Maine and greatly reduced production at the remaining two. Direct employment in salmon aquaculture has fallen from about 1000 in the late 1990s to just 330 today. While aquaculture remains an important contributor to the economy, the expectation that Maine's coastal economy (especially Downeast) would be rebuilt based on thousands of aquaculture jobs has not been realized.

Maine's shellfish aquaculture industry is centered primarily along the mid- and southwest coast and produces mussels, oysters, hard clams and surf clams for growout and/or sale of seed juveniles to culturists in Maine, New England, and elsewhere. A public aquaculture program for soft-shell clams has existed in Maine since 1987. Private shellfish culture is an owner-operator industry with a high enough profit margin to be viable on a small scale. It is not an easy business to get into, however. The long lead time (usually three years) from hatchery to commercial product, and the risks of disease, pollution and predators make shellfish aquaculture unattractive to some entrepreneurs. Maine shellfish growers see enough growth in demand to support their operations for the next 10-20 years. (Experiments with Urchins, Sea Scallops, Halibut and Cod are underway but are far from commercialization in Maine at this time.)

Maine's aquaculture industry is concentrated in two geographic areas: Cobscook Bay, where most of the salmon is produced, and in the Damariscotta River estuary where much of the oyster production takes place. Mussels are grown in various locations along the mid-coast area using both raft and bottom culture techniques.

Aquaculture Compared With Other Industries

Maine salmon landings have produced the second highest revenues of all Maine fisheries for the past ten years. Salmon and shellfish aquaculture are similar in value to other Maine agricultural products. The tables below compare the value of Maine aquaculture with other fisheries and agriculture in the state.

Species	Pounds Landed, 2002	Value, 2002
Lobster	62.3m	\$207m
Salmon Aquaculture	14.9m	\$30m*
Groundfish (all species)	22.5m	\$22.5m
Clams	2.5m	\$14.8m
Shellfish Aquaculture	1.1m	\$3m

Numbers given above are estimates based on landings reported to DMR and from revenue estimates from Gardner Pinfold study and the Portland Fish Exchange.

*Five year average value of salmon landings is \$54m, 2002 was a down year due to fallowing for disease and a severely cold winter.

Maine Products	Pounds Harvested	Value, 2001-2002
Lobster	62.3m	\$207m
Dairy	654m	\$106.6m
Salmon	14.9m	\$30m
Blueberries	62.3m	\$15.9m
Apples	47m	\$11.6m
Shellfish Aquaculture	1.1m	\$3m

In addition to looking at aquaculture in comparison to other Maine products, a look at aquaculture's placement in the within the state's economy and within the marine-related economy is a useful exercise. Aquaculture is one sector of Maine's natural resource-based economy that traditionally includes fishing, aquaculture, forestry and agriculture¹⁰ This sector remains a foundation of Maine's economy although the combined contribution to Maine, as both a provider of jobs and of wealth, has diminished over time. In the Year 2000, employment in fishing, farming and forestry together comprised 8.3% of Maine's total employment base. In 2003, direct employment in aquaculture (330 jobs) represents .05% of Maine's total employment base.

A 2001 study by the State Planning Office¹¹ stated that the natural-resource based industries together were expected to continue to contribute roughly 9-10% to Maine's

¹⁰ **Fishing, Farming and Forestry, Resources for the Future, Maine State Planning Office, 2001** Data from this report is not directly comparable with that contained in the Gardner-Pinfold study.

¹¹ **Fishing, Farming and Forestry, Resources for the Future, Maine State Planning Office, 2001** Data from this report is not directly comparable with that contained in the Gardner-Pinfold study.

Gross State Product into the future. Of the total contribution to the GNP from these industries, fishing and aquaculture represent the smallest subsector. In the year 2002, aquaculture contributed .10% to the Maine's Gross State Product.

The marine-related economy is subset of Maine's coastal economy. The National Ocean Economics Project characterizes the ocean economy as including those industries that are directly and partially dependent on the ocean, including seven broad economic sectors.¹² Figures from the National Ocean Economics Project (NOEP)¹³ were used to view the relative importance of fisheries and aquaculture with other sectors. NOEP's draft figures for Maine were used in this comparison¹⁴.

The relative importance of the "living marine resource" sector to Maine's ocean economy is shown in the following table. In this case, living marine resources includes canned and cured seafood and fresh or frozen packaged fish. No further breakdown for traditional fisheries and aquaculture was included in this study, and figures available from other sources were not directly comparable and therefore were not used.

Ocean Economy Output by Sector (1997)¹⁵

Sector	Total Output¹⁶	Value Added¹⁷
Tourism and Recreation	\$2,780,121,000	\$1,030,622,000
Transportation	\$2,713,589,000	\$524,272,000
Living Marine Resources	\$382,707,000	\$49,049,000
Marine Construction	\$44,956,000	N/A
Minerals	\$14,921,000	\$6,168,000
Research	N/A	N/A

These figures show that aquaculture is a small but important sector of Maine's natural resource-based economic sector. It adds to the diversity of Maine's coastal economy, and

¹² Construction and rehabilitation including marine construction and such activities as beach nourishment and coastal storm repairs. Living resources, including commercial fishing, fish processing and aquaculture. Minerals, including oil and gas and sand and gravel. Tourism and recreation, including lodging, restaurants, boating activity and sporting goods. Transportation including boat and ship building, and transportation of cargo and passengers on the ocean and along the coast. Research, including that involving both the physical and biological dimensions of the coast and ocean. Government, including the activities of federal, state and local agencies related to the ocean.

¹³ www.oceaneconomics.org The NOEP is developing a comprehensive nationwide measurement of economic activity and economic values associated with the ocean.

¹⁴ The Coastal and Ocean Economy of Maine: A Preliminary Report, National Ocean Economics Project, February 2002. Note that data from this report are not directly comparable with that included in the Gardner-Pinfold report.

¹⁵ The Coastal and Ocean Economy of Maine: A Preliminary Report, National Ocean Economics Project, February 2002.

¹⁶ Output is estimated as a function of wage/output ratios which are derived from the 1997 Economic Census and the IMPLAN model (Minnesota IMPLAN Group.)

¹⁷ Multiplier effects for employment and output were estimated using the IMPLAN model.

provides critical employment opportunities in downeast Maine. As discussed in other parts of this section, shellfish aquaculture in particular, offers entrepreneurial opportunities for coastal residents.

Global Context

Since the 1970s, aquaculture has grown by 10% per year. In 2001, world aquaculture production was 37.9 metric tons and represented 29% of all seafood production. World aquaculture revenues are estimated at US\$55-60 billion. The US imported over \$10 billion in seafood in 2002, including over \$500m in salmon fillets.

Several factors indicate a continuing growth trend for aquaculture: seafood consumption is rising, and wild capture fisheries are declining. In the US, two demographic shifts may drive an increase in seafood consumption: the aging of the population (there will be 70 million Americans over the age of 60 in 2020) and the growth of the Hispanic population (who consume 24% more seafood than the national average). In short, there is expected to be an increased demand for seafood both in the US and the world. With wild capture fisheries declining, the demand for aquaculture products is expected to continue to grow.

Aquaculture Economic Study

As part of the data gathering process for the Task Force, the Department of Marine Resources commissioned an economic study of Maine's marine aquaculture industry. The study was conducted by Gardner Pinfold Consulting Economists, Ltd. of Halifax, NS. The study accomplished two major objectives:

1. A quantitative assessment of the economic impact of marine aquaculture in Maine
2. A quantitative assessment of aquaculture viability and growth projections for eight species.

The study was based on interviews with members of industry, government, university and private agencies. A brief summary of findings of the study is given here. To get a copy of the full report, please go to www.maine.gov/dmr/aquaculture, or contact Sue Inches, Department of Marine Resources, (207) 624-6558.

The Task Force also examined the findings of an Economic Impact study commissioned by the Maine Aquaculture Innovation Center. This study was conducted by Planning Decisions, Inc. and is available at www.maineaquaculture.org

Maine Aquaculture Industry Economic Data 2003

	EMPLOYMENT (Full Time Equivalent)	SALES REVENUE (\$000s)
Salmon	225	54,000
Oyster	60	1,000
Mussel	45	2,000
Total	330	57,000

The aquaculture industry generates 910 jobs, and just over \$38 million in earned income (the value added contribution to Gross State Product). An additional \$6.7 million accrues as federal and state taxes (Table S-2).

Direct impacts are generated in hatcheries, growout operations, and to a limited degree in processing (most salmon is now processed in New Brunswick). Indirect impacts occur in goods and services supplied to the industry including vessel and equipment suppliers, transportation, insurance, maintenance and repair, technical support and packaging. Induced impacts arise from the spending of earned incomes in direct and indirect activities.

Maine Aquaculture Industry Economic Impact 2003

	JOBS	EARNINGS (\$1,000)	TAXES (\$1,000)
<i>DIRECT</i>	<i>330</i>	<i>20,300</i>	<i>2,900</i>
<i>INDIRECT</i>	<i>380</i>	<i>10,900</i>	<i>2,400</i>
<i>INDUCED</i>	<i>200</i>	<i>7,100</i>	<i>1,400</i>
<i>Total</i>	<i>910</i>	<i>38,300</i>	<i>6,700</i>

Viability by Species

The study also assessed the economic viability of a number of species. The assessments are based on Maine growing conditions, the most up to date technologies, current capital and operating cost estimates, and current and future market conditions.

- **Atlantic salmon:** Production is economically viable, though falling prices resulting from increasing international supply and declining production costs are narrowing the margins of Maine growers. Industry expansion is possible within most current lease areas, and applications for new sites are pending. But the future is uncertain in light of the 2003 U.S. District Court ruling, which requires pollution discharge permits.
- **Atlantic halibut:** Biophysical conditions in coastal waters are acceptable across all aspects and production would be viable. The University is currently conducting experiments in growout, while commercial production is underway in other countries. Farming in conjunction with salmon is an approach used elsewhere to spread capital costs.
- **Blue mussel:** Culture is viable using the raft and rope method. (While a number of growers use bottom culture techniques, an economic analysis of this activity wasn't included in this study.) Industry expansion is possible within most current lease areas. Expansion of current leases is planned in many cases, and expiring experimental lease-holders will likely apply for standard leases in the future.
- **American oyster:** Culture is viable and existing operations are expanding output, wishing to double or triple capacity within existing lease sites. Finding suitable lease sites is a challenge because sites that meet the specific growing needs of oysters and that do not interfere with other uses of coastal waters are hard to find.

- **Sea scallop:** Culture of scallops for meats (adductor muscle only) using suspension techniques is found not to be viable because of high capital costs and the risks associated with price sensitivity to swings in the capture fishery. A small niche market may exist for whole scallop culture, but the short 4-5 day shelf life of the product and the added cost of toxin monitoring may be barriers to success.
- **Soft-shell clam:** Using stock enhancement techniques shows promise, but generally low clam prices provide little incentive for private enterprises to incur the necessary costs. Community-based stock enhancement may be justified on the basis of broad social benefits.
- **Cod and Haddock:** These emerging finfish species show promise for Maine. Biophysical conditions would support production of these species in some areas of the coast. Future planning should take these species into consideration.
- **Sea Urchin:** Although a formal economic analysis of sea urchin culture was outside the scope of this study, hatchery and growout experiments are underway in Maine.

Growth Projections

Aquaculture in Maine could again become a \$100 million industry. There is scope for expansion in each of the principal species, based on biophysical conditions and suitable sites, as well as the interests and plans of growers. Table 4 sets out growth projections (in dollar terms) for two- and ten-year periods. Even with this projected growth, Maine's production will fall well short of U.S. demand. The key assumptions underlying the projections are:

- **Salmon:** the industry will experience some short-term decline as it adjusts to the implications of the Carter ruling. Market and biophysical conditions support expansion to a level 50% greater than the peak reached in 2000.
- **Mussel:** there is considerable enthusiasm for expansion among growers. Growth projections assume 25% increase in production over the next two years, with a total increase of 57% by the year 2012.
- **Oyster:** growers all plan to double or triple production in the short term. Production is assumed to expand by half over the next two years (based on planned seeding), and then double from that level by 2012.
- **Other:** production of other species (bait, halibut, cod, haddock) is planned or possible. This could add \$5-10 million to the projections by 2012.

Table 4
Maine Aquaculture Growth Estimates, \$000s

Species	U.S. demand	Maine supply		
		2003	2005	2012
Salmon (1)	925,000	30,000	20,000	100,000
Mussel (2)	35,000	4,000	5,000	7,000
Oyster (3)	68,000	1,000	1,500	3,000

Overall Findings from Economic Study

Maine has the biophysical conditions to support a substantially larger aquaculture industry than exists today. The natural environment is a necessary, but not a sufficient, condition for development and growth. Other factors such as a supportive policy and regulatory regime, good research and development capacity, and access to capital are also critical.

Jurisdictions such as Norway, Chile and even New Brunswick, British Columbia and Prince Edward Island share some common characteristics. Each has experienced rapid aquaculture development by leveraging excellent natural conditions through the combined effects of a favorable research and development framework, and a supportive regulatory environment. *In each case the focus was on a single species for which there were few unknowns about biological, site and equipment performance.* This is not to say that a single species focus is necessary or desirable, but experience indicates that concentration of resources provides a good springboard for growth.

Circumstances are different in Maine. The natural environment is suitable for several species, but missing from the list of essential ingredients are a supportive regulatory environment, supportive communities, and well-funded research and development institutions. Public support is most critical at the early development stage because private companies generally lack the resources to carry R&D costs over the required 10 to 20-year development timeframe.

APPENDIX G: SAMPLE PUBLIC MEETING NOTICE



AQUACULTURE TASK FORCE PUBLIC MEETING

**Thursday, Nov. 6, 2003, 7:00 PM
The Atrium, 21 Gurnet Road
Cook's Corner, Brunswick**

The Task Force on the Planning and Development of Marine Aquaculture in Maine is holding the third of four public meetings to receive advice and comment from the public on aquaculture. Please be advised that the fourth public meeting will be held in Eastport on November 19th.

The Legislative Resolve that created the Task Force directs its members to consider specific topics in making recommendations to the Legislature, including:

- Bay management or aquaculture development strategies
- Present economic impacts and short and long-term growth potential
- Impacts of aquaculture on tourism, recreation, conserved lands, and surrounding fisheries
- Mitigating external impacts of farms
- Statutory decision criteria for granting leases
- Role of municipal government

The Task Force is seeking advice and comment on these topics as well as other matters of interest to the public regarding aquaculture. Written comments may also be submitted and can be mailed to Marine Aquaculture Task Force, c/o Department of Marine Resources, State House Station 21, Augusta, Maine 04333-0021 or emailed to marine.aqua@maine.gov.

For more information on the Task Force, please visit: <http://www.state.me.us/dmr/aquaculture/>

To request any information described
in this notice, contact:

**Mary E. Costigan, DMR, PO Box 8
West Boothbay Harbor, Maine 04575
207 / 633-9531**

If you require disability accommodations, contact Gilbert
Bilodeau at 207 / 624-6567, TTY 207 / 287-4474 /
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Authority: L.D. 1519